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ABSTRACT

Activities for school age day care programs are presented in detail in this guide for children, parents, and day care staff. The guide consists of 14 illustrated booklets that provide activity instructions and some background information. Topics are: (1) functions of school age day care; (2) quiet and active games and materials; (3) toys and play props to make; (4) ways to develop the child's physical (indoor and outdoor) environment; (5) gymnastic exercises to be used to teach physical skills; (6) recipes and food activities which teach the child nutrition, good eating habits, and academic skills; (7) science and nature projects which informs the child about trees, insects, and other subjects; (8) community resources for children; (9) arts and crafts activities in such areas as crafts from other cultures, decorations, nature projects, and woodwork; (10) music activities, including appreciation exercises, singing, dancing, composing, and learning about musical instruments and equipment; (11) communication and creative dramatic activities; (12) projects that focus on special interests of the older child (ages 10 through 12); (13) classroom management and day care program planning; and (14) business and program forms and recordkeeping. The appendix contains a tabular listing of small equipment and supplies. Slide shows are available to complement the guide. (SE)

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DAY CARE for School-agers

PS 010257

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TEXAS DEPARTMENT OF HUMAN RESOURCES

FOREWORD

If you're involved with caring for school age children, this guide is for you and them. It has been tested in day care centers to insure that school-agers with reading skills, as well as the staff, can use it to plan and enjoy activities.

We appreciate the cooperation and enthusiasm of staff, children, and parents in day care programs where testing was done. We also appreciate the contributors who gave us material based on their experience with school-agers. We thank others for sharing ideas and resources that have proved successful over the years.

The idea for this guide was born 25 years ago in the mind of Mabel Pitts, the department's expert in child development. She observed a child who was being cared for after school. He did nothing but stare into space for an hour. No one spoke to him. No one paid a second of attention to him. He spoke once, to no one in particular, and said, "I want to go home." Since that time, Ms. Pitts relates, "I've seen many sad and lonely school-agers, their time and their minds being wasted in day care. But I've seen some happy and thriving school-agers in care, too. I hope this guide will help prevent the one situation and achieve the other."

The original source for some material in this guide has been difficult to find, but credit is given where possible.

* * *

TO COMPLEMENT this guide, there are 28 slide shows (with script and slides), each dealing with an aspect of day care activities, such as "Nature Walks," and "Parties Planned By Children." There also is a longer slide show, with sound, that gives an overview of school age day care. For information about the shows, write to Child Development Program Division, Texas Department of Human Resources, John H. Reagan Building, Austin, Texas 78701.

TEXAS DEPARTMENT OF HUMAN RESOURCES

DAY CARE FOR SCHOOL-AGERS

A program guide
for school-agers, parents,
and day care staff

This guide was assembled by Ms. Gayle Browne under contract with the Texas Department of Human Resources.

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DAY CARE
for School-agers

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School Age Day Care

1. Special Care for School-agers

Providing day care services to school age children is different than providing services to younger children. For school-agers, the day care center must supplement school care as well as home care, in regard to the time and quality of care. At the same time, day care experiences can be more flexible than experiences at school, and more diverse than those at home. Day care has special potential for helping school-agers.

Good school age programs have at least three features:

1. They aim to provide experiences beneficial to the child's body, intellect, and personality.
2. They strengthen the care and guidance provided by parents.
3. They build on school programs and other community programs without duplicating them.

For children of this age, the hours out of school should provide opportunities for discovering and developing skills, accepting responsibility, and being with adults who are good models. Adults should help children discover talents and gain competence.

School-age day care should provide the freedom to challenge, explore, create, and develop, within the framework satisfying to both schoolagers and adults.

2. Types of Programs

Some programs care for younger children in the mornings and school-agers in the afternoon. The younger children may stay all day.

There are day care programs operated by community agencies. These programs are held in school facilities or community centers which are located within walking distance of the schools. Fees are based on the ability of the family to pay. In some, children who attend the nearby school and have no parent at home after school hours may participate.

Charitable agencies such as the Salvation Army may sponsor a school age day care program.

Proprietary centers are organized for profit and governed by the same principles as any small business. Many have kindergarten and first and second grade classes in addition to younger children. Arrangements may be made for a child to attend the center before school begins and after school hours.

Most school age programs operate all year, adjusting hours and programs to school schedules. Some centers are closed on school holidays. This is a problem for parents who work on these days.

Some centers do not operate during the summer; others care for school-agers all day during the summer. There are special programs for school age children which exist only during the summer. These may be day camps, 24-hour camps, or summer recreation programs. They may be sponsored by private individuals, non profit agencies such as the Scouts, local parks and recreation departments, or churches.

3. Characteristics of School Age Children

Physical

Growth slows during the middle years of childhood. The child between six and twelve has soft bones and a flexible skeletal system. Muscle growth during these years enables a child to move more quickly and accurately. Children under six tend to move their whole bodies because they do not have control of its separate parts. This means that younger children may need special help developing skills before they can participate in certain games. As they approach seven years of age, they gain control, become stronger, and need less rest.

Vision is not fully developed until seven or eight, especially in boys. Eye movements are slow and the young child has difficulty seeing small print.

Health tends to be good during the middle years of childhood. Common contagious diseases may be a problem during the first few years of school, but if immunizations are current and general health is good, these illnesses are not likely to be serious.

Ten, eleven, and twelve-year-old girls may move into preadolescence earlier than boys.

Emotions

From ages six to 12, children learn to do things without help. Strength increases - children begin to regard themselves as capable people, rather than weak and ineffective. As they learn about the world, they become less fearful.

As children become independent, they seek adventure. They begin to explore the unknown. School age day care should provide opportunities for adventures. Field trips and community outings are a way to meet this need.

Young children are self-centered. They want their needs met immediately. They have difficulty controlling their feelings and often turn to adults to solve problems. With growth, they develop self-control and become more generous and cooperative. They begin to give as well as take. They can put off getting what they want for a while and settle for not getting everything they want.

Social Life

As children age, they become eager to be part of a group. They want to be like their peers and to be liked. They're more conscious of their sex. Much of this comes from modeling after parents, but other adults also are sex-role models.

Children practice skills over and over - skills that are important now and later. They learn games. They explore their talents and come to accept some of their weaknesses. Ritual is an important part of play during these middle years. Children like counting games, they like to repeat the same rhymes. Often, problems and feelings are worked out in games. Children frequently try to act like an adult during play.

Children between six and eight usually play games without many rules, or make up rules as they go along. There isn't much team spirit. Usually small groups cluster together, and friends change from day to day. By nine or ten, groups are larger and more definite. Rules become exact and pass from one group to another. Young children tend to see fairness in terms of black and white. Older children are less severe and can see that rules may change depending on people and events. They may give a younger child an extra turn or change the rules to make a game easier for the younger child.

Intellect

Young children must have concrete experiences in order to learn new ideas. They cannot think of abstractions. As their minds grow and they have more experiences, they will be able to understand more complicated ideas. As they approach adulthood, they will be able to reason and use abstract ideas. They have a natural urge to learn. Words are a basic link between them and other people, so talking and listening are important. Curiosity should be channeled into constructive hobbies. Children explore many interests during these years. Some are abandoned, but others will grow and last a lifetime.

Through all these explorations, school-agers gradually discover a lot about themselves - what they can do and what interests them. They develop a sense of privacy as well as independence. Their concern for collections and valued belongings is an expression of their search for identity.

Another way school-agers establish identity is through work projects. They can be intensely occupied with learning and doing. They need real jobs that accomplish something useful and are within their abilities. They need a say in decisions which concern them.

4. The People Involved In School Age Day Care

Children

The children can benefit from school age day care because they can:

- pursue special interests;
- move from activity to activity and from experience to experience when they are ready;
- follow up on their ideas for projects;
- group and regroup as desired, with a small group or larger group, with older or younger children, benefitting in ways unique to each grouping;
- have a say about what to do, when, with whom, how;

- help decide how other's ideas might be acted upon;
- deal with real problems to be solved. For example, how can X be divided so it's fair to everyone? Where can there be an area for puppets or creative drama? Where can materials be acquired? How can privacy be provided when someone wants to be alone? Children can take part in the kinds of decision making and problem solving which they'll need in later life.

Parents

Most parents of school-agers in day care are working parents, glad that their children are safe and happy at a day care center. There are other ways parents can be involved and benefit from their children's day care.

Parents can discuss their child's development with professionals, and work with conscientious, capable people for their child's wellbeing. They can visit the center and learn about their child by seeing how they interact with other children and adults. Parents can meet with and learn about other parents and families, sharing interests and experiences about child-rearing. With involvement in day care, parents have daily contact with professionals who can counsel about home and family problems. Parents will enjoy learning from a child the new games and activities offered at the center. Parents can develop a sense of community involvement by helping plan and administrate day care programs. They can do volunteer work at the center, attend meetings, serve on policy committees. And parents can feel good knowing that others care about them and their family.

Other Adult Leaders

In school age day care flexible, creative adults who understand and believe in school-agers can contribute to society, help children, and have satisfying personal experiences. Adult leaders:

- can provide a program which provides for the individual needs of the school-agers and their families;
- can draw on many disciplines and other programs to develop their program;
- are not tied into structured routines imposed from outside;
- can organize according to the activity;
- need not always be moving from one location to another;
- need not evaluate children regularly according to a set system which requires testing, and therefore, can appreciate and consider reactions to the program by the children and parents.

The Community

Many resources are available to day care programs: agricultural, cultural, vocational, and others. Everyone is a potential volunteer: teenagers, senior citizens, church members, people with specific skills and knowledge.

See the section on community resources for details.

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Games

1. Overview

What's Good About Playing Games

Games are fun. They also can provide useful experiences and teach things that are good to know. But first they should be fun. If they're fun, school age children will play them enthusiastically, and get the benefits that games have to offer.

What other benefits are there? A game may be mentally or physically stimulating, or both. It may be good for being alone or for practicing interaction with others. It may provide a chance to experience teamwork or personal achievement. It may help develop sportsmanship. It may help develop a lifelong leisure interest or some special talent.

Since games can be such a good thing, it makes sense to teach them carefully so that they're understood. And to teach them in such a way that the children *want* to play them instead of feeling forced to play them.

Creating a good atmosphere for game-playing can be trickier than teaching specific rules. Of course the adult's attitude is important. So is the place itself. And having the children take part in the planning and organizing of the games is good strategy. Most games can be played lots of ways. If the children help decide what and how to play, they'll be playing what they want to play. And planning itself can be fun.

As for the games described here, they are inexpensive and simple. Props are simple, repairable, replaceable. Most of these games use equipment which children can make.

Before A Game Is Introduced

Before a game is introduced, the teacher should know the game thoroughly, be sure that what's needed either is available or can be made, that there is enough time for the game, that there's the right number of children, that there's a good way of teaching and motivating the group.

Introducing A Game

It's good to talk about the game before the day it's introduced, if possible. Discuss any special history about the game, show pictures, post directions on cardboard or put them on a browsing table.

Timing is important. Games should fit into the whole day care program. For instance, an active game could follow a rest period, a quiet game could be played while children are waiting to be picked up.

During the first day or two, introduce only a couple of games. This is a time when children will form lasting impressions, so pick games that might be the most popular. These first games should be especially easy to learn. Devote special attention to children who seem to need the most direction.

One good time to introduce a game is when some children have finished an activity with which others still are involved. Pick a game that can be stopped whenever the other children begin to finish their activity and again need attention. There are several advantages to this strategy. It presents a chance to introduce games to a few children without anyone being neglected. And, since different children will be learning different games, later the children can teach each other the games they know. They'll be more involved, and the adult will gain time.

When explaining a game, define and use terms repeatedly so the children will get used to them. When stressing the purpose of a game, talk about when it ends rather than who wins and loses. At first discuss a few basic rules, then gradually talk about other rules. And, as in most learning situations, a good method is to teach by demonstration and participation. Have some practice games.

The adult always should be available when needed, but soon the children will be able to play the game by themselves.

Put a chart on the wall listing the games available. List games the children suggest.

More complicated games can be introduced after the children know each other and the adult, and after they've gained some experience with games.

General Considerations

Taking care of props: Have the children help put props away as soon as they're no longer being used. The children also can help repair props as soon as they're damaged. If props are in good shape, the game can be played better and the children will be safer.

Making rules: Agree on rules before the game starts. Everyone should understand that rules are for everyone's benefit. Consider how much time there is, space, equipment, and especially how the children want to play the game. Then set rules accordingly.

Deciding the order of play: Some games have no special rules for deciding who plays when. If not, some ways of deciding are: drawing for the high card, rolling dice or drawing numbered pieces of paper from a glass to see who gets the highest number, and drawing straws to see who gets the short one. If possible, play until everyone has had an equal number of turns. That way, the order of play doesn't matter much.

Picking teams and who does what: Usually these things should be determined by chance. If the children choose sides, someone may be embarassed for having been the last one chosen.

One way to form teams is by counting off. If three teams are needed, the children line up and count off 1, 2, 3. Those with the same number are on the same team. Or, draw colors or numbers - the same ones being on the same team. For deciding who's to have a special part (the leader, the person to be "it"), draw straws.

Keeping score: In some games, the score is obvious. In many games, the way to keep score is specified in the rules. Or, there can be a scorekeeper - one for each team, one for each player, or one for the game. Everyone should agree on how to pick the scorekeeper and the scorekeeper's role, and be able to see the score as the game is played.

Children can invent their own methods for keeping score. Here are some suggestions:

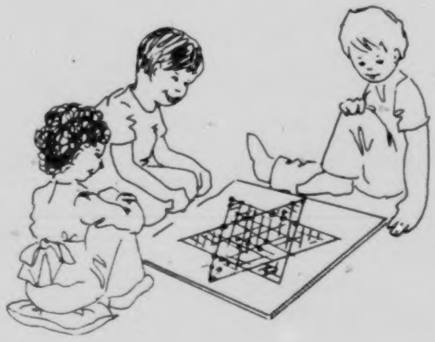
- Put a pebble in a can for every score.
- Mark in groups of five: Outside, scratch the marks in dirt. Inside, use the plain side of a box.
- Lay sticks in a pile.
- Stick toothpicks in an empty egg carton.

Marking boundaries: Some games don't have to be played in exact areas. Some do - marbles and hopscotch, for instance. Boundaries also may be needed for rest areas and safety areas.

On hard surfaces, use masking tape, chalk, or paint. In dirt, make a shallow ditch. Lengths of string, clothstrips, or cardboard also can make boundary markers. Or, use a line referee. For older children, if something is put at each end of where the line should be, the children can imagine the line. Younger children might not be able to do this.

Using the library: Get the children interested in doing research. There are books about the histories of games, individual games, games using a special type of equipment such as cards, games of certain cultures, games for different ages, games for special occasions.

2. Quiet Games



Chinese Checkers

It's not checkers, and it didn't come from China. But it's called "Chinese Checkers" and here's how it goes.

Materials:

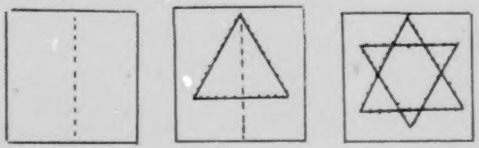
* for a board:	the side of a cardboard box, at least 24 inches square
* for the game pieces:	small objects that'll fit on the board, such as lids or bottle caps — 10 like pieces for each player (same shape, color)

Directions:

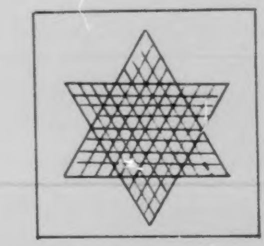
1. Draw a line down the center of the cardboard (to be erased later).

2. Draw a triangle as shown, each side 18 inches long. Mark each side every 1½ inches.

3. Measure 6 inches down from the point of the triangle. Draw a horizontal line 18 inches long through these marks and make another triangle. (See picture.) Mark the sides of the new triangle every 1½ inches. Erase the guide line. Outline the star with a heavy line.

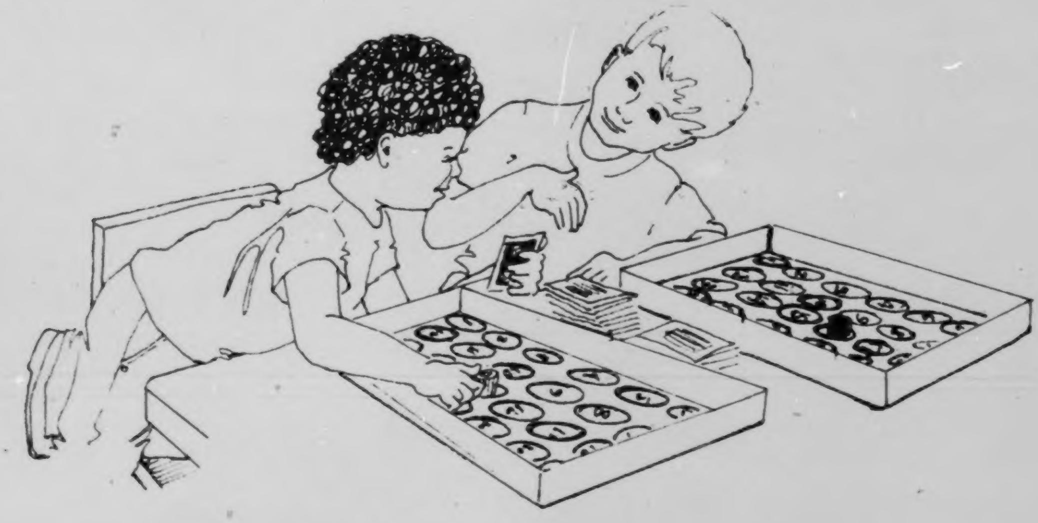


4. Connect the 1½-inch marks with thin lines, as shown. Where the lines cross and where they make the star's outline, make a large dot to show where the game pieces go.



TO PLAY From 2 to 6 can play. Everybody gets 10 matching game pieces, and starts out from one of the triangles. (See picture.) Players try to get their game pieces to the opposite side of the board (see picture) before anybody else. They get one move at a time, and take turns. As in checkers, you can jump as many game pieces as possible in one move. But unlike checkers, you can jump your own guys, and the jumped pieces stay on the board. Game pieces can go forward or sideways, but not backwards.

Suggestions: The board also can be made from plywood. Make holes instead of dots, and use marbles for the game pieces. When not being used, the board can be hung on the wall like a picture.



Red-Black Counting Game

Materials:

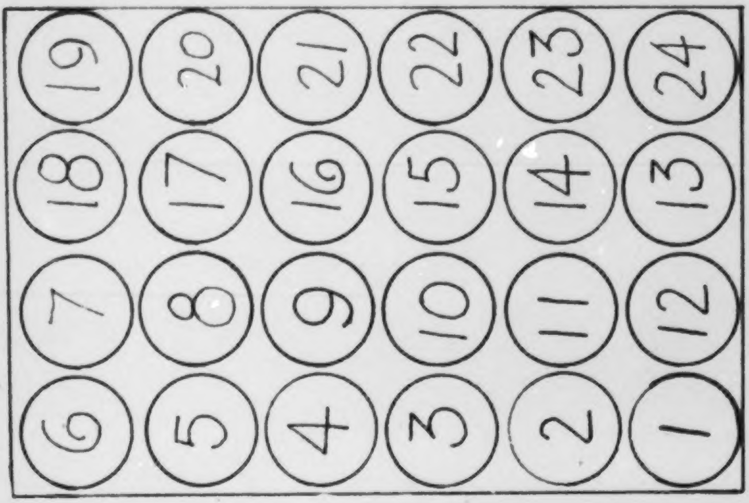
- 2 cardboard trays (bottoms of packing boxes, cut off by grocers to display cans)
- red and black felt markers, or crayons
- playing cards – ace through 6 in each suit
- 2 game pieces

To make game board on a cardboard tray, trace circles around the bottoms of cans with a red felt marker or crayon. Number the circles as shown. On the other cardboard tray, draw the circles with a black felt marker or crayon. The game boards must have the same number of circles.

Directions:

One player uses the red board, the other the black board. Shuffle the 24 cards and put them face down between the players. Red turns over the top card. If the card is red, the player moves the number of spaces shown on the card. If the cards's black, no one moves.

Then Black turns over a card. If it's black, the player moves according to the number on the card. If the card's red, no one moves. The game is over when someone reaches number 24 on the game board.



Checkers in the Round

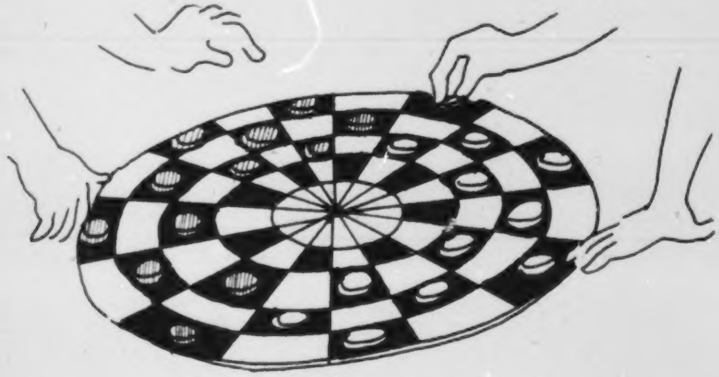
This is a version of checkers that's really a test of skill.

Materials:
- large piece of cardboard
- 12 checkers of each color (or homemade game pieces)

With a felt pen, draw a circle about 10 inches in diameter on the cardboard. Draw a small circle in the center of the large circle. Draw 3 more circles evenly spaced between the large and the small circle. Now divide the circle into 16 wedges (like a pie). First draw a line to divide the circle in half, then into 4 sections, then into 8, and finally into 16 parts. Set up the board as shown in the picture.

Directions:

The rules for round checkers are the same as for regular checkers except there are no kings and players can move their piece forward *and* backward on the diagonal.



Card Games

Materials: a deck of cards

Directions:

Crazy 8 This is a simple, fast moving game for 2 to 6 players. The dealer shuffles the cards and deals 6 cards face down to each player. The rest of the deck goes face down in the middle of the table, with the top card turned up at the side of the deck. This card is called the "up-card." If it's an 8, put it back in the deck and turn up the next card.

The players take turns, starting on the dealer's left and going clockwise. Each player hopes to have a card which is either the same value or the same suit as the up-card. Such a card can be discarded, is placed face up over the up-card and becomes the new up-card. For example, if the up-card is the 4 of diamonds, the player may play a 4 of another suit or any other diamond. A player who can't match the up-card must draw from the stack until a match can be made.

An 8 of any suit can be played at any time as a wild card. A player who puts the 8 down as the new up-card may say which suit the 8 represents. The next player must play that suit.

When all the cards have been drawn from the stack and none of the players can make a match, the stack is reshuffled and a new up-card is turned over.

The winning player is whoever runs out of cards first.

Joker From 2 to 6 can play. Use pairs plus the joker (or a face card if the joker is missing).

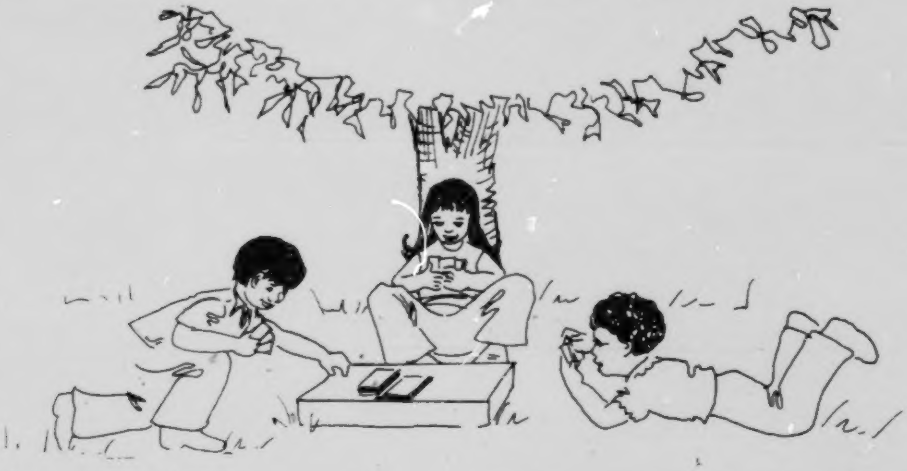
The dealer shuffles the cards and deals them face down. The players match their pairs and discard them. Play starts on the dealer's left and goes clockwise. Players fan out their cards so that only the backs show. Each player draws a card from the previous player's hand without knowing what it is. When a player draws a card that makes a pair with a card already held, the pair is discarded. If it doesn't make a pair, the new card stays in the player's hand.

The Joker goes from hand to hand as the game goes on. Gradually players will drop out as they run out of cards. After all other cards have been matched and discarded, the player with the Joker loses.

Concentration This is a memory game. It's usually played by 2 people, but may be played by more.

The dealer puts all the cards face down in rows. (To make it harder, put the cards in circles or in no pattern at all.) The first player turns up any 2 cards so that everyone can see them. If the cards are a pair, the player removes them and turns up 2 more. If they're not a pair, the player puts them back where they were, face down. A player who turns up a pair gets to keep playing. When 2 cards are turned up that aren't a pair, it becomes the next player's turn.

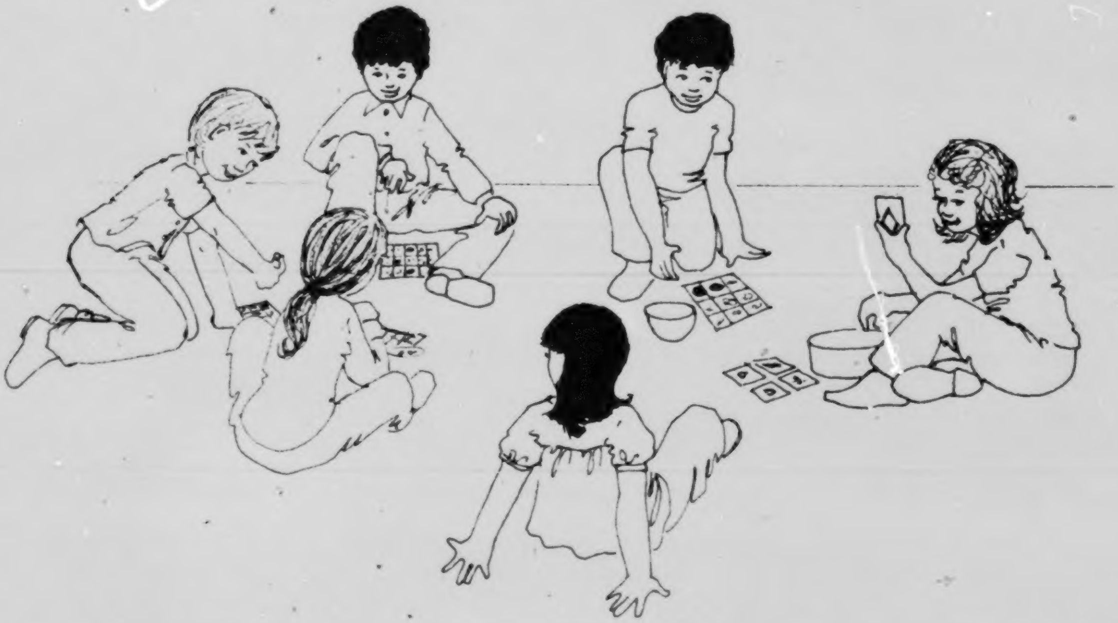
Players who are good at remembering the cards they've seen, often will be able to turn up a pair when their turn comes around. After all cards have been paired, the winner is whoever has the most pairs.



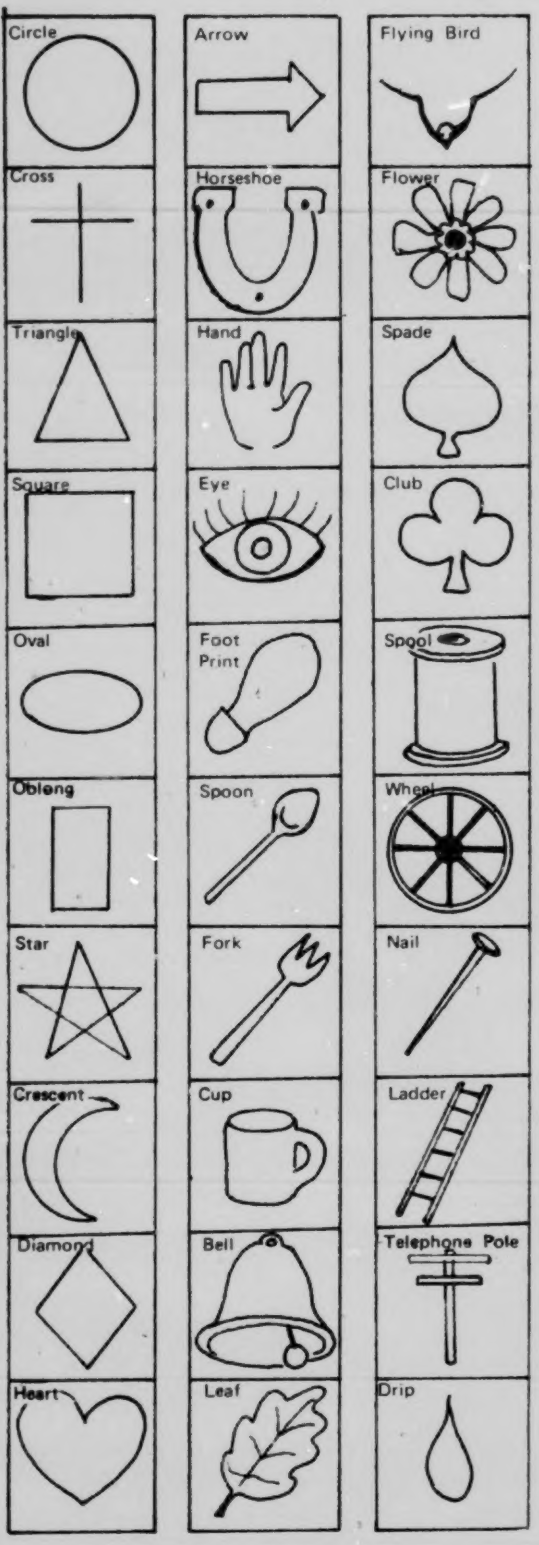
Design Bingo

Materials

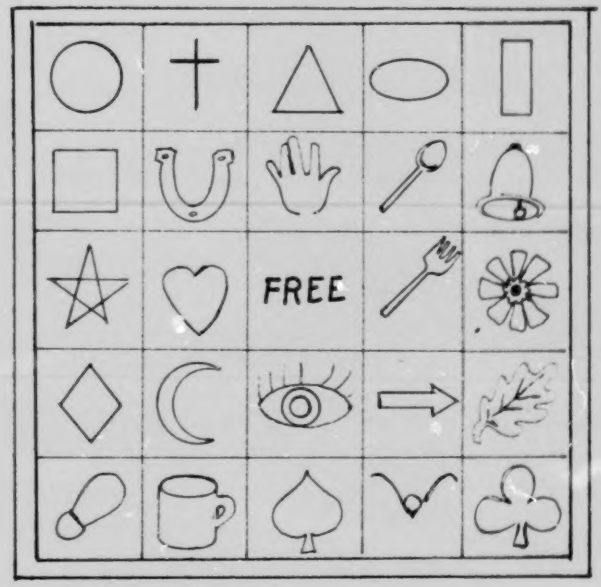
- 5 pieces of cardboard about 6 inches square to make game boards (see next page)
- 125 marker pieces, 25 per player (small rocks, buttons, etc. to fit into 1-inch squares)
- 5 small containers for markers
- 30 calling cards about 2 inches square (see next page)
- 1 large container for calling cards
- ruler, crayon, scissors



Cards


Circle
Cross
Triangle
Square
Oval
Oblong
Star
Crescent
Diamond
Heart
Arrow
Horseshoe
Hand
Eye
Foot Print
Spoon
Fork
Cup
Bell
Leaf
Flying Bird
Flower
Spade
Club
Spool
Wheel
Nail
Ladder
Telephone Pole
Drip

Game Board



Directions:

Make the game board and calling cards as shown on this page.

TO PLAY Each player gets a game board and 25 markers. The caller draws the calling cards, 1 at a time, holds each up and calls out the design. If the design is on a player's game board, the player puts a marker on the square with the design. Whoever covers a game board first is the winner.

Suggestions: Another way to play is to see who's first to fill a straight line of squares — vertical, horizontal, or diagonal. This is like regular bingo. There's also Color Bingo, Alphabet Bingo, People Bingo, and Numbers Bingo, depending on what's on the cards.

Draw squares on each game board as shown above. Draw a design in each square except the center. Mark the center "FREE."

To make sure each card is different:

Card 1 — Draw first 24 shapes on list.

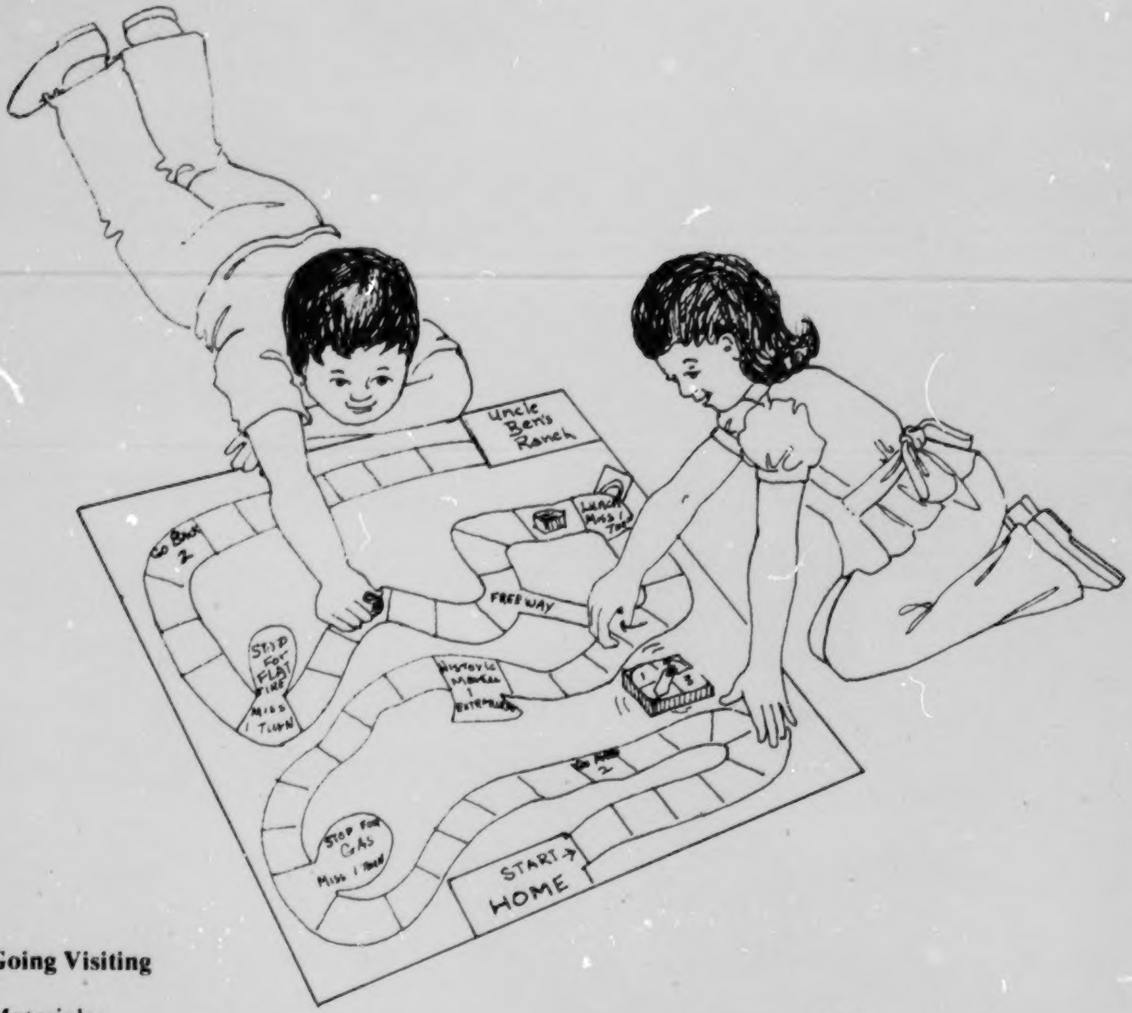
Card 2 — Don't draw circle or cross. Draw the next 24 shapes.

Card 3 — Don't draw circle, cross, triangle, or square. Draw the next 24 shapes.

Card 4 — Start at the bottom of the list and draw the last 24 shapes.

Card 5 — Draw the first 12 shapes and the last 12 shapes.

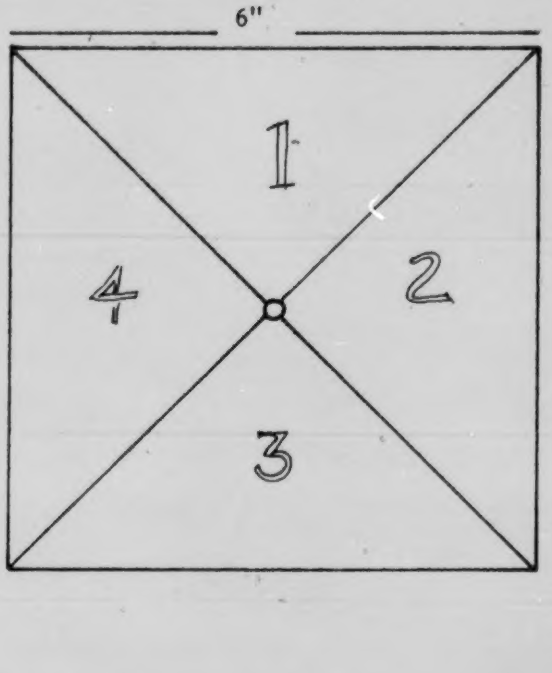
(Small cardboard scraps may be decorated and used as game pieces.)


Uncle Ben's Ranch
Go Back 2
Lunch Miss 1 Turn
Free Way
Stop for Flat Tire Miss 1 Turn
Historic Marker 1 Extra Turn
Go Back 2
Stop for Gas Miss 1 Turn
START →
HOME

Going Visiting

Materials:

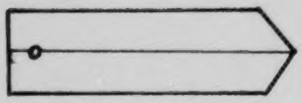
- 1 piece of cardboard at least 2 feet square to make the game board
- 1 piece of cardboard 3½ inches by 1 inch to make a pointer for the spinner card
- 1 piece of cardboard 6 inches square to make the spinner card
- 1 paper fastener or a piece of wood for the spinner base, and a large nail
- 4 game pieces (e.g. buttons, coins)



Directions:

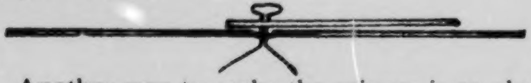
Make the game board as shown above. Make it more complicated by adding directions such as, "Creek flooded. Miss one turn." Make equipment as directed.

Draw lines and numbers on a spinner card as shown. Punch hole at the center.



Shape spinner and punch hole as shown.

Attach the spinner to the spinner card with a paper fastener.

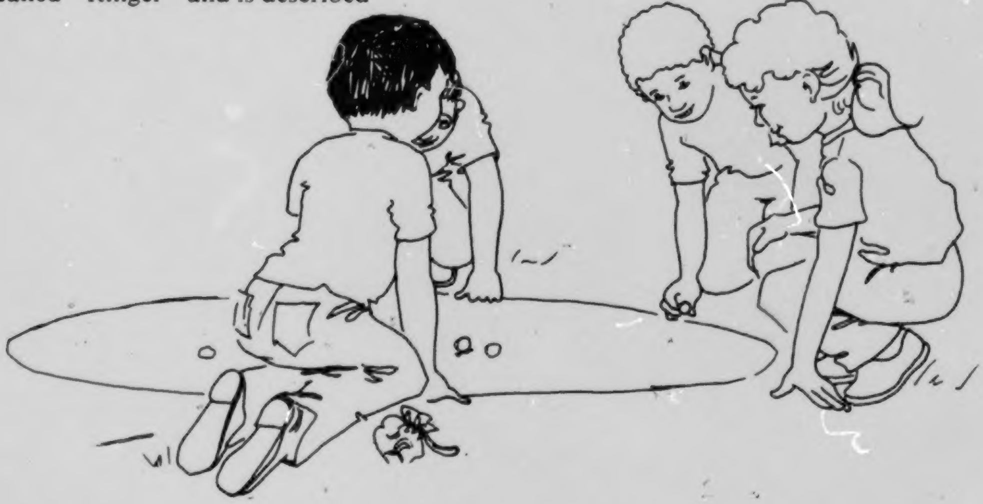


Another way to make the spinner is to glue the spinner card to a piece of wood, then fasten the spinner with a nail.

TO PLAY Each player tries to get to the place being visited before anyone else. Usually there are 2 to 4 players. Each gets a game piece. When the pointer stops on a number, the player moves that many spaces on the game board. If the pointer stops on a line between numbers, the player misses a turn. Everybody must follow the directions on the game board.

Marbles

Marble games have been played since ancient times with all types of small round objects. Today they're played all over the world in a variety of ways. One of the easiest and most popular ways to play is called "Ringer" and is described below.

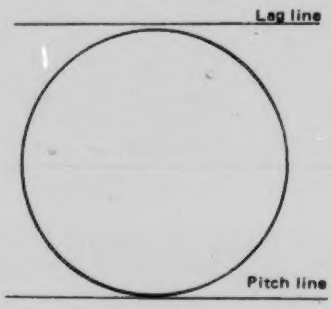


Materials:

- about a dozen marbles
- a shooter-marble for each player which everyone can identify
- smooth, packed dirt outside, or felt, flannel, velveteen, or smooth carpet inside
- sack, paper cup, or plastic bowl for the marbles

Directions:

Make a circle about 4 feet in diameter and mark the center. (Make the circle smaller for beginners.) See how to draw circles in "Aids to Games." Draw parallel lines on opposite sides of the circle for the lag and pitch lines.

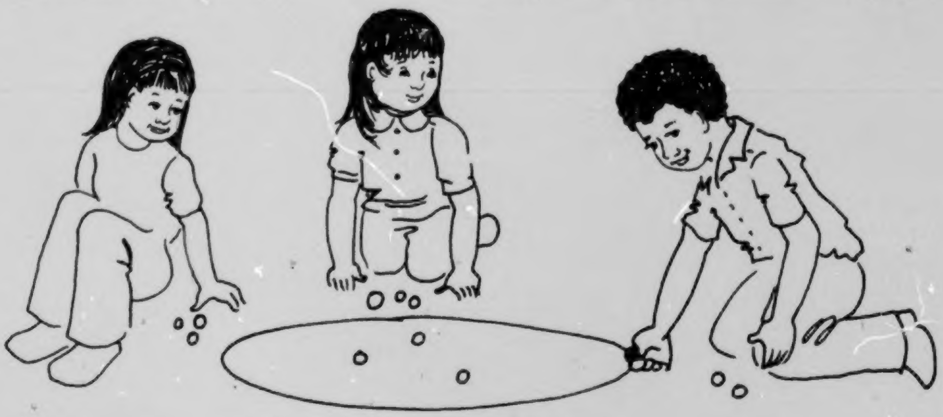


Directions for Shooting:

Have the child make a loose fist, tucking the thumb back to rest between the index and the middle finger, holding the fist with the thumb pointed away from the body. The shooter marble is placed in front of the thumbnail, cradled on the bent knuckle of the index finger. To shoot the marble, the knuckles rest on the ground and the marble is flicked out with the thumb. (There needn't be any definite rules about how the child shoots the marble.)

Ringer (2 to 6 players)

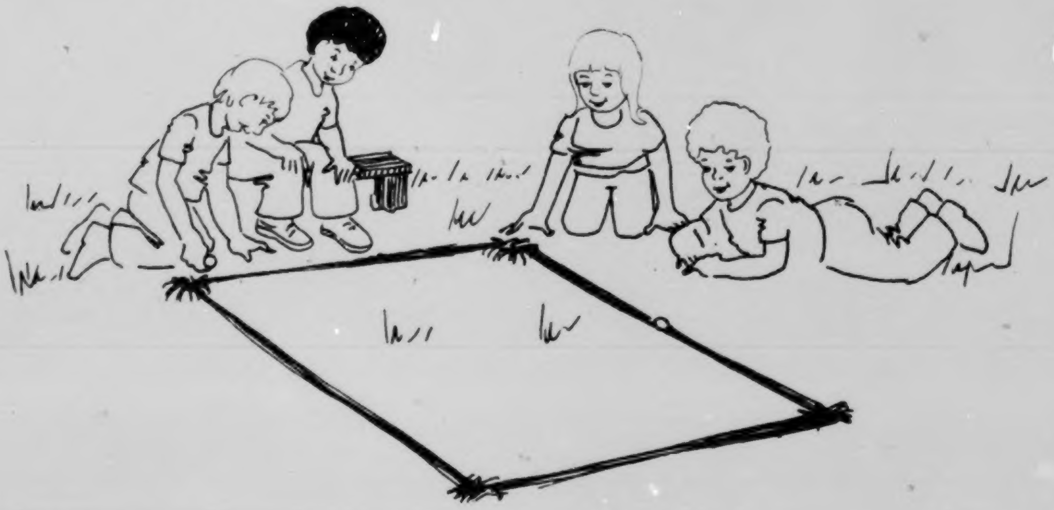
1. To decide order of play, each player shoots from the pitch line toward the lag line. The player whose marble stops closest to the lag line shoots first, the next closest shoots second, and so on. (This procedure could be fun and a simple game by itself, played similar to horseshoes.)
2. Place about 12 marbles inside the circle. Maybe arrange them in a pattern or bunch them in the center.
3. The object is to knock the marbles out of the ring with the shooter-marble. A player first shoots from any point outside or on the circle. Each marble represents one point. The same player continues to shoot from the spot where the shooter-marble landed on the previous shot, until the player fails to knock a marble out of the circle.



The player's shooter-marble then is removed and it is the next player's turn. The game is over when all the marbles have been knocked from the circle. The player with the most marbles is the winner.

A Variation:

Ringer also can be played by dropping the shooter-marbles in the circle while standing next to the circle. Players hold their marbles waist high and drop them onto the marbles below.



Marble Race (2 to 4 players)

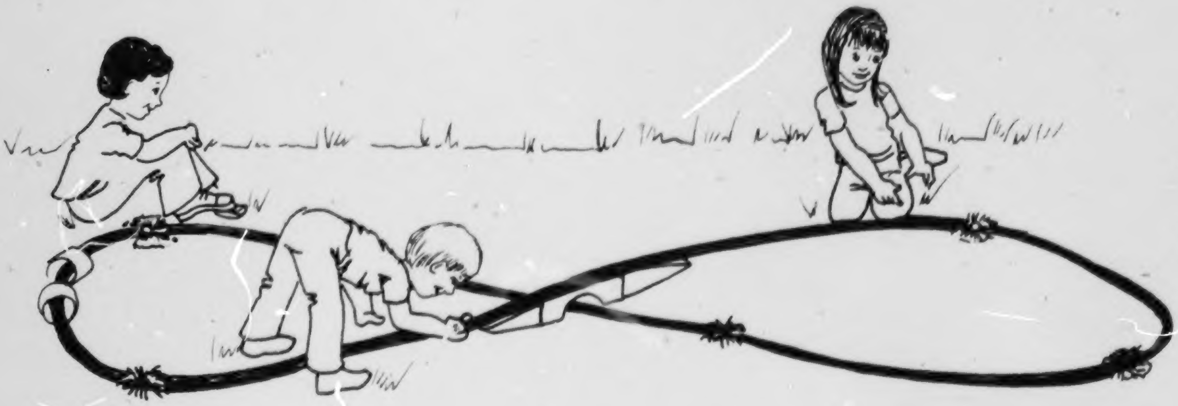
This game should be played outdoors. Each player has one marble. The marbles should be different so the children can recognize them. Draw a square on the ground with a stick. Each side of the square should be at least 2 feet long. (If the square is larger, the game is more difficult.) Make a shallow hole with the stick in each of the corners of the square. The holes should be large enough for the marbles to roll into them.

Identify one of the holes as the starting hole. The course of the race runs clockwise from that hole. The object of the game is for each player to shoot a marble along the course, landing in each of the holes in succession and ending back at the starting hole.

To begin the game, the first player holds a marble over the starting hole and shoots toward the first hole. If the marble does not land in the first hole, the player leaves it where it lands and the next player shoots for the first hole. A player who lands a marble in the correct hole gets a free shot at the next hole. The first player to finish the course is the winner.

Make a variety of playing fields to make the game more challenging. The field could be in the shape of an "8" (see illustration), or simply have a hole in the center of the square. The object is for the player to follow a prescribed course (like golf), landing a shooter-marble in each of the holes in succession.

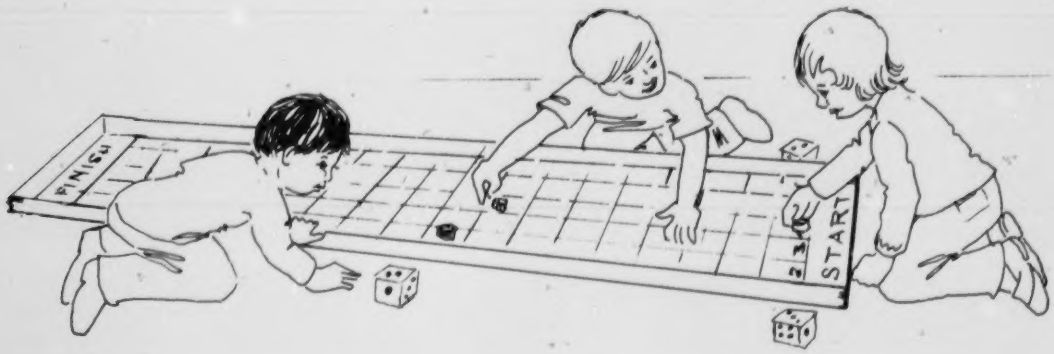
Suggestion: Anyone interested in learning different or more complicated marble games should check with a local librarian. Marble games are discussed in encyclopedias and game books. The set of rules for tournament play used by the National Recreation Association may be interesting to some school-agers.



Miniature Racing

Materials:

- 3 or more cut-down cardboard boxes, of equal width to make the race track (boxes used by grocers as trays to display canned foods).
- masking tape, glue, or staples to hold boxes together
- ruler, and crayons or marking pen
- game pieces for each player
- 1 die ("die" is singular of "dice") for each player

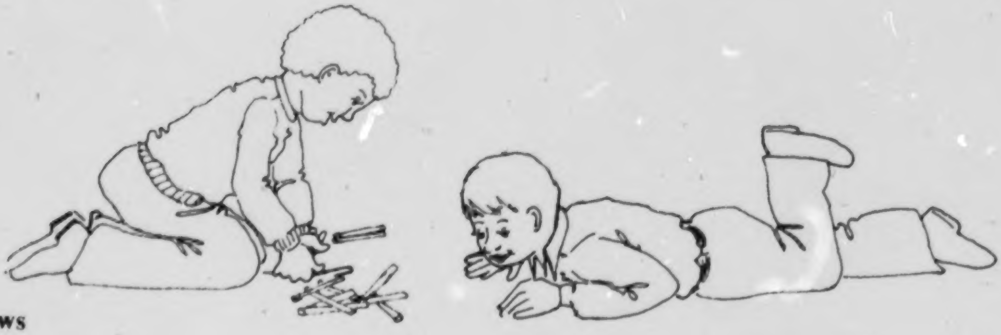


Directions:

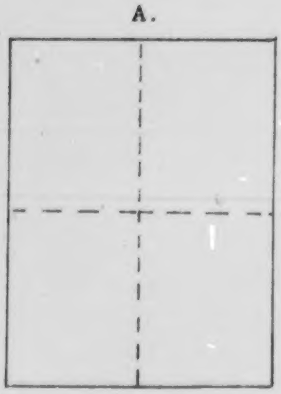
Cut one end off the start box and the finish box. Cut both ends off the center boxes. Fasten the boxes together to make the raceway. Draw the lines on the raceway as shown. Number the lanes, and write in "START" and "FINISH." See "Aids to Games" about making the dice. Game pieces may be cut off the ends of the cardboard and designs made on them.

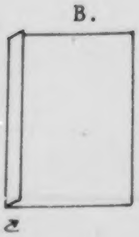
TO PLAY: As many may play as there are lanes. Somebody may want to be referee. The referee sees that rules are followed. Each player starts with a game piece at the starting line. Players roll dice to see which lane each player uses. Then they roll dice at the same time and each moves as many squares as the number rolled.

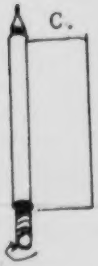
Suggestions: The children may pretend it's a foot race, a boat race, a car race — whatever they want. The game can be made longer by having the players race to the finish line and then back to the start.



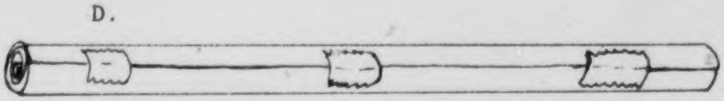
Pick-up Straws

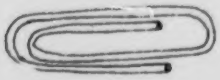


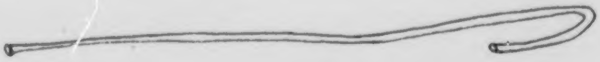




Materials:
- 10 slick, colored pages from an old magazine
- paper clip bent to make a hook
- narrow transparent tape
- pencil







Directions:

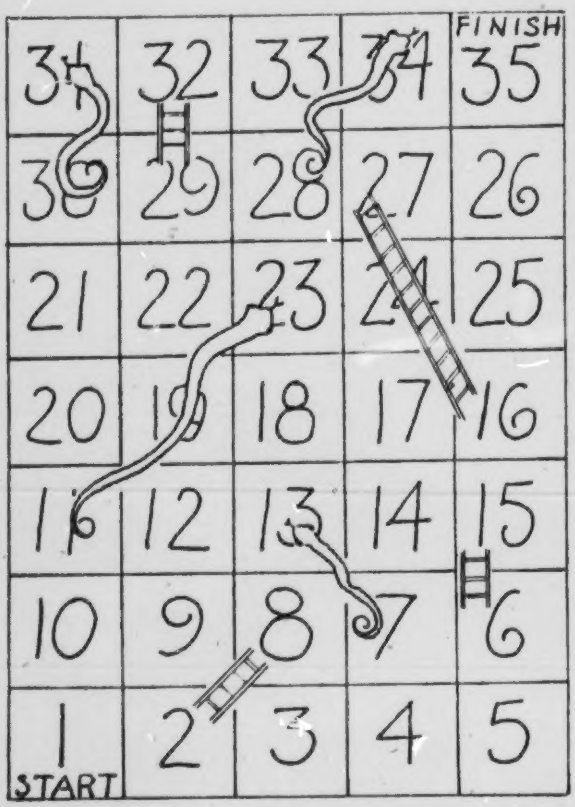
1. Cut each page into 4 parts.
2. Fold lengthwise edge of each part over about ¾ inch.
3. Roll the paper lengthwise around the pencil.
4. Put the tape around the center of the roll, and around each end.
5. Straighten a paper clip to make a hook.

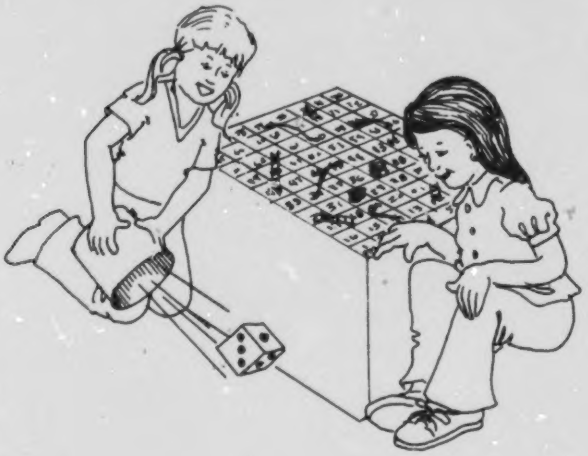
TO PLAY: Usually only 2 or 3 play. Somebody puts the straws in a pile. Everyone takes turns using only the paper clip hook to pick up 1 straw at a time, without causing another straw to move. Each straw counts 1 point. When a straw is made to move, it's the next player's turn.

Suggestions: Make colored straws and give each color a different value. Or play the game as it probably was played a long time ago — with twigs or sticks, and fingers to pick them up.

Snakes and Ladders

Materials:
- cardboard at least 12 inches by 16 inches for the game board
- 1 die ("die" is the singular of "dice")
- 1 game piece for each player — a rock or a bottle cap, for instance





Directions:

Divide the game board into squares with numbers, as shown. Mark the start and the finish. Draw in snakes and ladders. Maybe color them with felt markers or crayons. To make dice, see "Aids to Games."

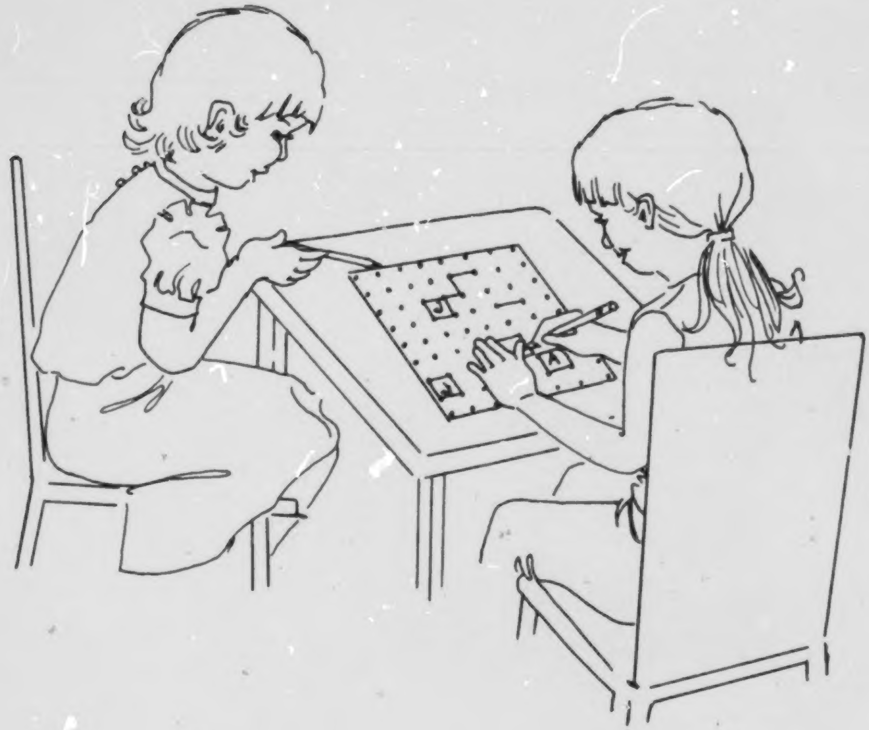
TO PLAY: See who can get from start to finish in as few turns as possible. From 1 to 4 can play. The players take turns throwing a die. Each must roll a "1" to place game piece at "start." Then, with each turn, the player moves the marker the number of squares shown on the rolled die. When landing on a square with the bottom of a ladder, a player moves the marker up to the square at the top of the ladder. When landing on a square with the head of a snake, a player moves the marker down to the square with the tail of the snake.

Claim The Squares

Colonial children played this game. Through the years the game has had many names, but it's still played as it was 200 years ago.

Materials:

- plain or lightly lined paper
- pencil or crayon
- ruler or straight-edged cardboard for drawing the dots on a straight line



Directions:

Draw dots so they're an equal distance apart and form a square.

TO PLAY: Usually 2 or 3 play. Somebody starts by drawing a line from one dot to a dot next to it. The line may be anywhere on the board. Lines may be drawn up, down, and across, but not diagonally. Whoever draws a line making the fourth side of a square, initials the square and takes another turn. The game is over when no more lines can be drawn. Then, if they want, the players can figure who's initialed the most squares.

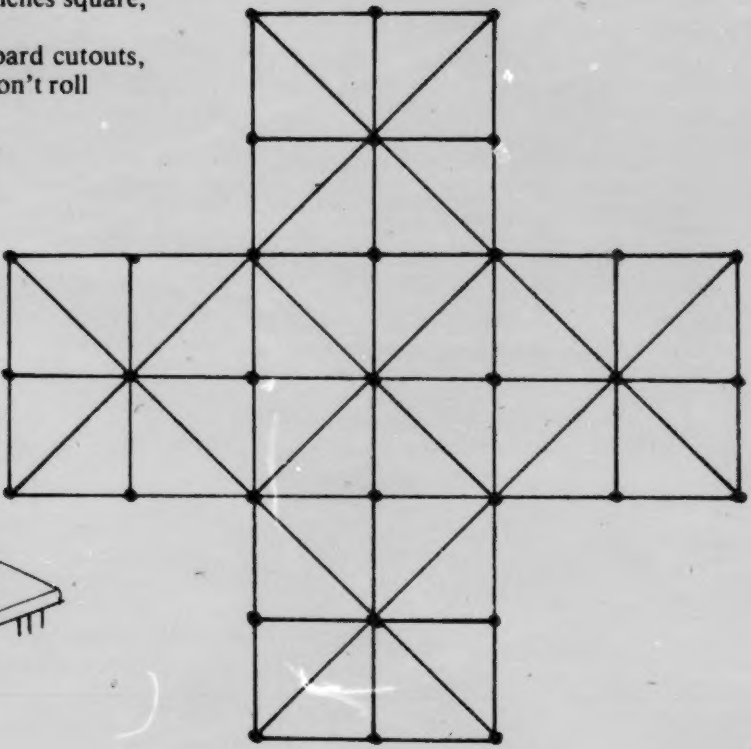
Suggestions: Make a re-usuable game board by taping heavy plastic over the dotted cardboard. By using a china marking pencil, the players can draw lines on the plastic and later wipe them off and play another game.

20-Square Solitaire

Materials:

- heavy cardboard, at least 14 inches square, for game board
- 32 game pieces such as cardboard cutouts, rocks, or other small objects that won't roll
- container for game pieces

Draw squares and dots as shown.



TO PLAY: A challenging game for 1 player. Place the game pieces on all the dots except the center dot. The player picks a game piece and jumps another one, landing in the empty space. The jumped piece is removed. The player keeps jumping and removing jumped pieces until no more jumps can be made. The fewer pieces left on the board, the better.

Suggestions: Several players each with a board, may play at the same time. They could divide into teams or, for children with less skill, several could work on the same game board.

Target Snap

Materials:

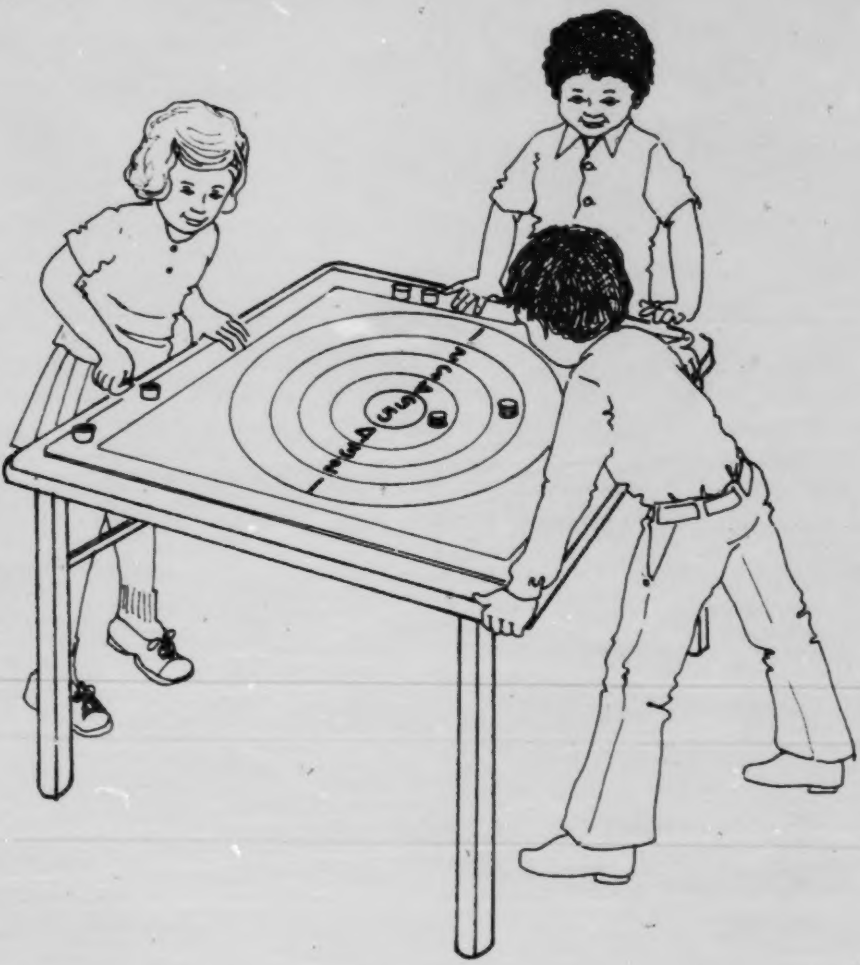
- heavy cardboard, about 3 feet square, for game board
- crayons or felt markers
- 4 game pieces (bottle tops, small lids, large buttons) for each player

Directions:

Draw a border around the game board, 2 inches wide, as shown. Draw 5 circles and number the spaces between them. Game pieces should be different colors or shapes, or marked to show which player each belongs to. For example, write a player's name on a circle of paper and press it into a bottle cap.

TO PLAY: Any number can play. As shown above, the players take turns snapping their game pieces from the border onto the target. When each player has shot all 4 pieces, they total their scores. Pieces that land on a line don't count. If a piece lands on the bull's-eye, the player get 5 points and an extra turn.

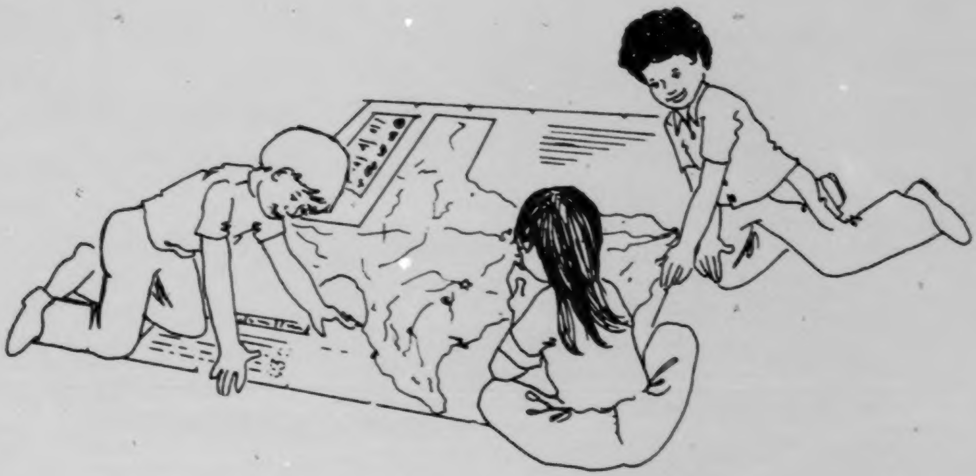
Suggestions: Children can make up rules to make the game harder or easier. They can play outside too. Draw the game board on a sidewalk with chalk, or scratch it in smooth, packed dirt.



Travel in Texas

Materials:

- 1 "Texas Highway Travel Map"
- 15 recipe cards, 3 inches by 5 inches, each cut in half (can be homemade, or see the resources section of this booklet about where to get them free)
- pen or felt marker
- game piece for each player



Directions:

For the playing board, glue the map to a big piece of stiff cardboard. Find the map's "legend", which shows symbols used for rivers, lakes, schools, cemeteries, parks, ferries, toll bridges, county lines, and road types (interstate highway, state highway, county road, etc.). Using these symbols, on 10 of the cards write directions such as "go directly to the nearest toll bridge," "turn right on next county road," "stop at first town."

On 10 other cards, write directions about milage. For example: "drive 25 miles and then stop for lunch," "rainy weather, stop in 5 miles." (Most maps show the number of miles between towns printed in red beside the road.) On the 10 remaining cards, write directions such as, "move to the next town," "car trouble, return to last town passed."

TO PLAY: Each player picks a starting place and a destination. Then everyone draws or rolls dice to decide the order of play. The cards are shuffled and put in a pile, face down. The first player draws a card and follows the directions, then places it face up next to the unplayed cards. Then it's the next player's turn. The object is to see who can get to a chosen destination first. When all cards are used, shuffle them and use them again. Players may take any road unless the card that's drawn says otherwise.

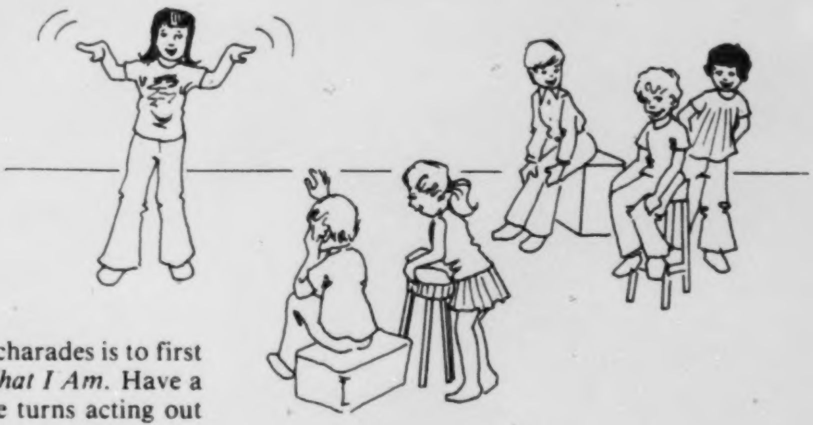
Suggestions: Maps from other states will be interesting, especially if some children have traveled there.

Other Quiet Games

These games are good for using as filler during waiting periods or as a change of pace during a busy day. They're also good party games. No materials are needed.

Charades

Charades is popular with children and adults. It can be a simple game, or as difficult and complicated as the players want. It's a guessing game: somebody acts out a word or phrase, and the other players try to guess what it is.



An easy way to learn about charades is to first introduce a game of *Guess What I Am.* Have a group of 4 to 10 children take turns acting out one thing - a small group gives everyone more chances to participate.

To introduce the game, have something written on a piece of paper, as dog, cat, rabbit, doctor, painter, etc. One child reads a piece silently and then acts out what's written and the others guess what's being demonstrated.

Another variation is *Guess What I am Doing.* An activity such as sweeping, driving a car, cutting the grass, etc. is acted out.

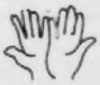
The group can have fun thinking of other animals, people, or activities to act out.

After becoming familiar with these activities, school-agers will be ready for charades.

Divide into 2 teams. Each team thinks of songs, books, movies, TV shows, slogans, etc., writes each down on a separate piece of paper, and gives all of them to the other team. Each player on the other team reads one of the titles or phrases - no one else sees it. The player acts it out for the rest of the team to guess. A record is kept of how long it takes the team to guess each charade. At the end, the winning team is the one which takes the least total time to guess all the charades. A time limit should be set for each charade.

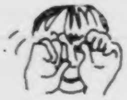
Usually the acting is done without using words or props, but players can play however they want. Certain gestures are used for particular words. The group needs to agree on these gestures before play begins. Here are some examples:

BOOK TITLE —



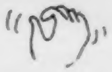
(palms together, then opening out like a book)

MOVIE TITLE —



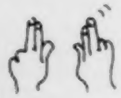
(left hand clenched to make a peep hole at eye level, right hand cranking like an old movie camera)

TV SHOW —



(hand held out and moving as if turning on a TV)

SLOGAN —



(index finger and second finger on each hand held up like quotation marks)

To show the number of words in a title, show the same number of fingers. To show the number of syllables in one of these words, point to the finger which represents the word and then hold up the number of fingers equal to the number of syllables. If the guessers are getting close to the answer, motion with hands to "come on." If they're getting away from the right answer, hold up hands to tell them to stop.

Example: For the word "Tennessee," a player could act out playing tennis and then make waves to represent the sea. Or a player could hold up 10 fingers for "tenn" and make the letter "e" and "c" using fingers. For the movie "Ride a Wild Pony," a player could pretend to ride a horse while bumping up and down. This would demonstrate the whole phrase. Or each word could be acted out separately.

Twenty Questions

Somebody thinks of an object. The other players try to figure out what it is by asking questions about it. All questions must be phrased to get an answer of "yes" or "no." The first questions often are to find out if the object is animal, vegetable, or mineral. The players may ask up to 20 questions. If they don't guess the object by then, the person who thought of it gets to think of a new object. Whoever correctly guesses an object gets to think of the next one.

Instead of guessing an object, the purpose may be to guess a person. Or, whoever has thought of the object can say, "I see something that starts with the letter ____" (giving the first letter of the object's name). In this case, it must be something in view. The players then ask questions.

Simon Says

"Simon" sits in front of the group and gives commands, such as:

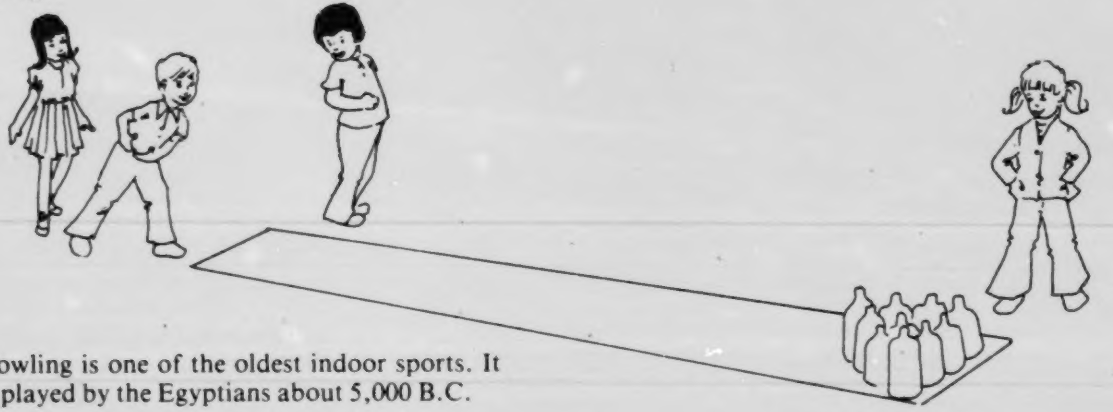
"Simon says wave your hand."
"Simon says bark like a dog."
"Simon says wiggle your thumb."

Players should only follow commands which are preceded by "Simon says." When a player follows a command not preceded by "Simon says," that player is out of the game. The last player not fooled by Simon becomes the new Simon and the game starts over.

The quicker Simon gives the command, the harder it is for the other players not to goof up.

3. Active Games

Bowling



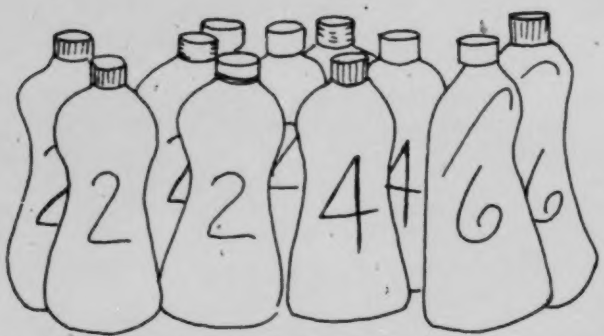
Bowling is one of the oldest indoor sports. It was played by the Egyptians about 5,000 B.C.

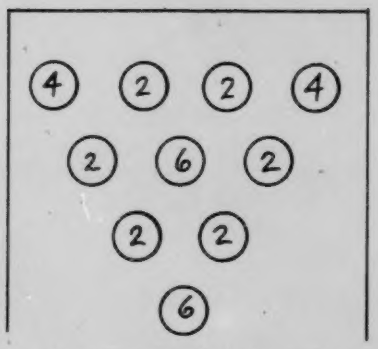
Materials:

- 10 empty plastic detergent bottles, all about the same size
- 5 cups of sand or fine gravel to weight the bottles
- 1 rubber ball — no smaller than a soft ball, no bigger than a beach ball.

Directions:

Remove the labels, rinse and dry each bottle. Put in ½ cup of sand or fine gravel. Screw the bottle caps on tight. Number the bottles — 2 bottles with #4, 2 with #6, and 6 with #2. Choose a smooth spot for the bowling alley, 16 to 20



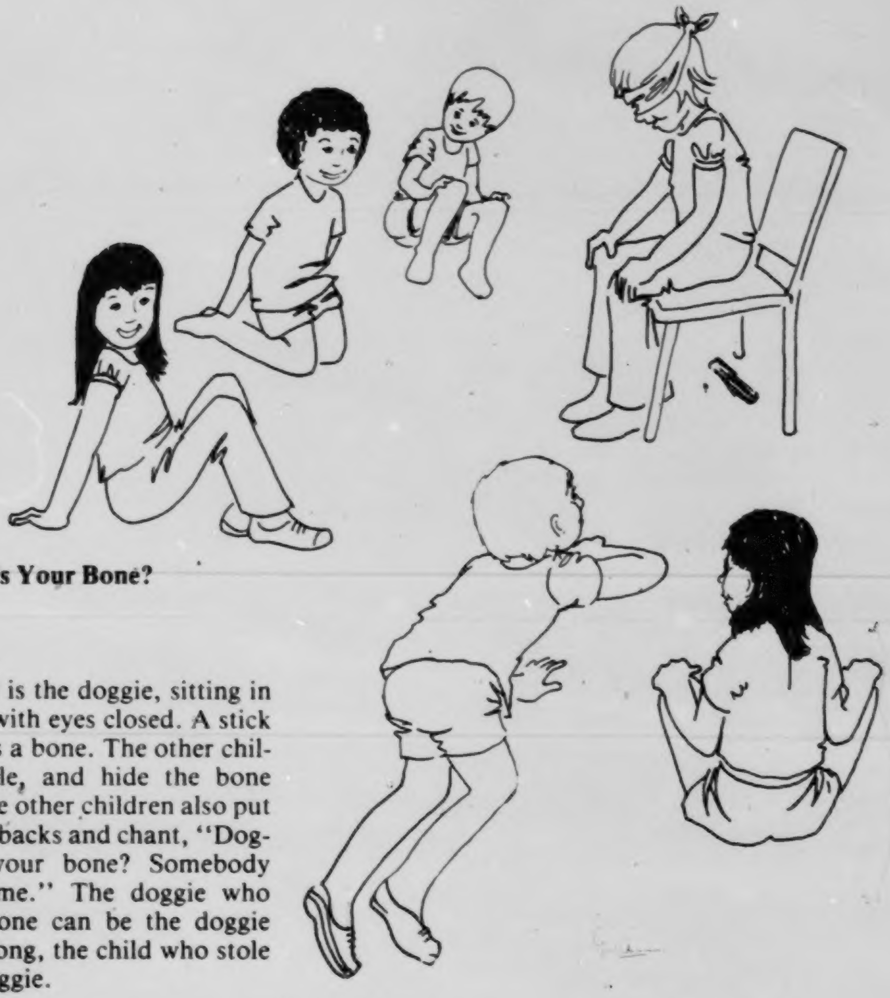


feet long and about 3 feet wide. Draw borders with chalk. Boards laid along the edges will help keep the ball in the alley. Draw circles where pins should stand, and number them as shown.

TO PLAY: From 2 to 5 can play. Roll the ball from behind a drawn line. To figure the score, add the numbers on the pins knocked over. The bowler sets up the pins for the next player.

Suggestions: If the children are interested in learning more about regular bowling, such as the terms and keeping score, invite someone who knows about bowling to come and talk with them.

Bowling can be played inside or out.



Doggie, Doggie, Where's Your Bone?

Materials:

- stick to use as bone

TO PLAY: One child is the doggie, sitting in a chair, blindfolded or with eyes closed. A stick under the chair serves as a bone. The other children sit in a semi-circle, and hide the bone behind his/her back. The other children also put their hands behind their backs and chant, "Doggie, Doggie, where's your bone? Somebody stole it from your home." The doggie who guesses who has the bone can be the doggie again. If the guess is wrong, the child who stole the bone becomes the doggie.

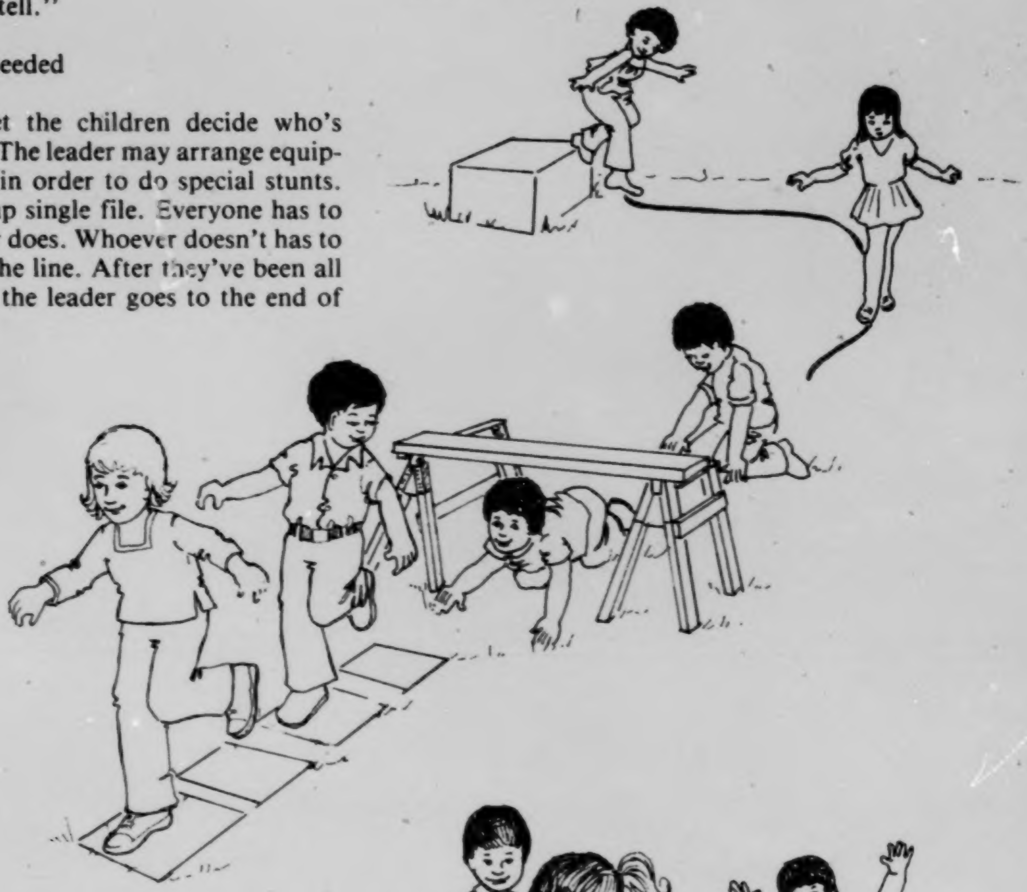
Follow the Leader

"Follow the leader
Follow him well,
What he'll do
No one can tell."

Materials: none needed

TO PLAY: Let the children decide who's first, second, etc. The leader may arrange equipment in the yard in order to do special stunts. The players line up single file. Everyone has to do what the leader does. Whoever doesn't has to go to the end of the line. After they've been all around the yard, the leader goes to the end of the line, and the next person in line is the new leader.

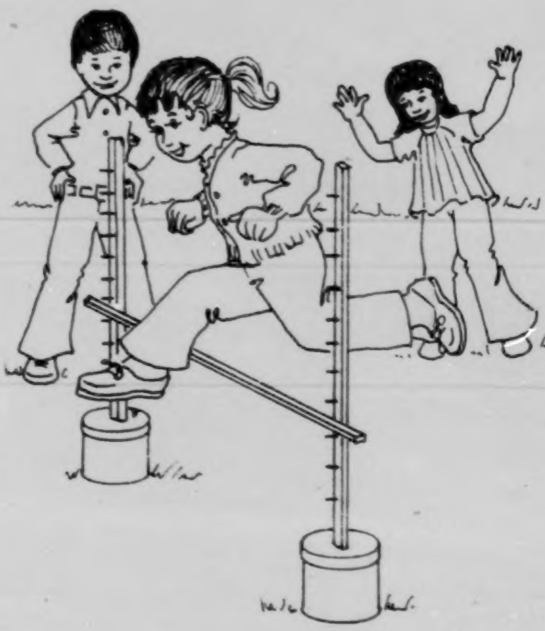
Suggestions: Everyone may sing or chant (the rhyme at left, for instance) while following the leader.

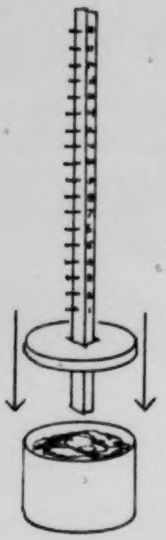


High Jump

Materials:

- 2 wood side supports — 2 inches by 2 inches by 4 feet (or 2 broom handles)
- 1 lightweight cross bar — narrow, light stick 4 feet long (or fishing pole or curtain rod)
- 2 bases for side supports — coffee cans with plastic lids
- cement or plaster of paris
- 36 finishing nails, each 2 inches long





Directions:

Sandpaper the side supports and paint them if desired. Measure and mark them every 2 inches, except for 12 inches at one end. Hammer a nail halfway in at each mark. Number the nails, starting at bottom (see drawing). Mark the centers of the plastic lids, and cut out squares which the side supports can fit into tightly. Push a lid onto the end of each support that doesn't have nails, as shown.

Fill the cans nearly full of cement or plaster of paris. Push the side supports into the cans as shown. Snap the lid onto the top of the can. When the cement is stiff enough to keep the support from leaning, loosen the lids so the cement can dry. The cans should set at least 24 hours before using the high jump. Afterwards, snap the lids back on and maybe paint the cans.

The side supports should stand at least 36 inches apart. The cross bar goes on the nails. Nails always should face away from the jumper so that the cross bar will give way easily if the jumper hits it.

TO PLAY: The children can make up rules. In real high jump contests, everyone starts at a low height. The cross bar gradually is moved higher and higher. Everyone who makes a jump in 3 tries gets to try the next higher jump. Whoever jumps the highest wins.

Suggestions: A temporary high jump stand can be made by pounding a few nails into the lower part of 2 mop handles. Place the mopheads in buckets or cans filled with rocks and dirt. Use bamboo or a dried corn stalk for the cross bar.

Hopscotch

Hopscotch can be played a lot of ways, with any number of players, inside or outside, on a floor, pavement, asphalt, or smooth dirt.

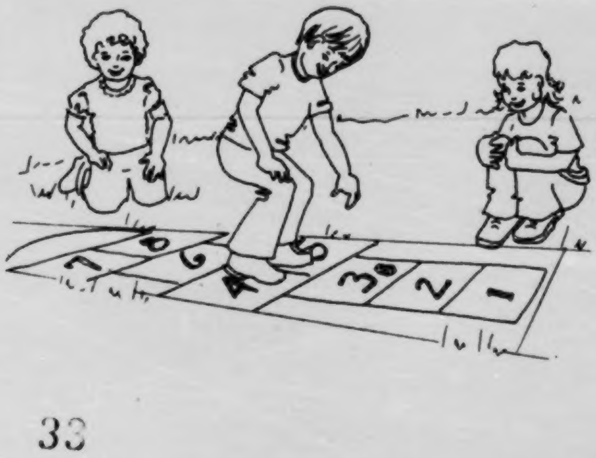
Materials:

- something to make the diagram, such as chalk on the sidewalk, a stick in the dirt, or masking tape inside
- a large sheet of plastic 3 yards long, marked with a permanent marker for indoor hopscotch
- pebbles or anything the children can recognize as game pieces

The size of the squares should be determined by the skill and age of the children. A 15-inch square is a good size to begin with. (See the physical skills section for activities that young children may need to master before they are ready for hopscotch.)

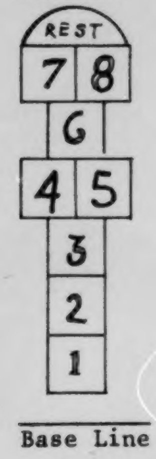
Directions:

American Hopscotch: The first player stands behind the base line and throws to square 1. If the game piece lands in the square, the player



jumps on one foot over square 1 to square 2, then 3, then lands with both feet. The player continues to the rest area where standing on both feet is allowed. The player then hops back to square 2, picks up the game piece, hops into square 1, and then hops out. The first player then throws to square 2 and keeps playing until there's a miss.

DIAGRAM

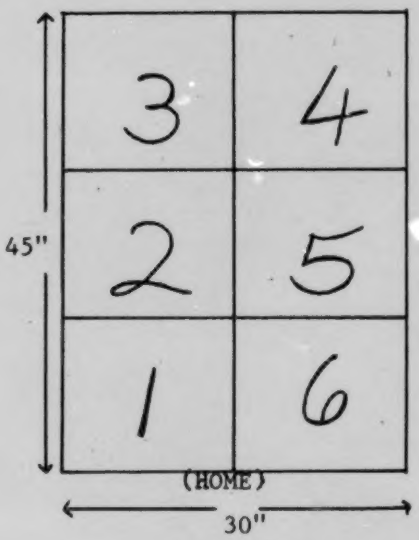


A miss is when:

1. The game piece doesn't land in the right square or lands on the line (in which case the player puts the game piece in the right square and awaits the next turn).
2. While hopping, the player's foot touches a line.
3. The player changes from one foot to the other while hopping.
4. The player hops into the wrong square.
5. The player touches the ground with a hand or the wrong foot.

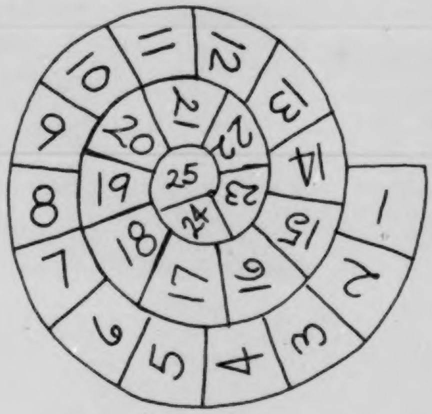
The second player then starts and does the same as the first player. Everyone has to hop over a square which contains someone else's game piece.

English Hopscotch: The player jumps with both feet, carrying a stone between them. The object is to jump into each square in numerical order and return "home" without dropping the stone or stepping on a line. When two play as partners, the second player begins in the square where the partner missed. Partners do not follow each other, but alternate turns with opponents. A player who makes a successful round is not declared the winner until everyone's had a turn. If more than one player succeeds, a second round is played to see who wins.



Spiral Hopscotch: Players stand at the beginning line and throw game pieces onto the first row of numbers. The player whose marker falls on the highest number hops to that square and stops. Then the player whose game piece is on the next highest number hops to that square and stops, and so on until all the players are on the squares with their game pieces. Players must hop over any square which has another player's marker.

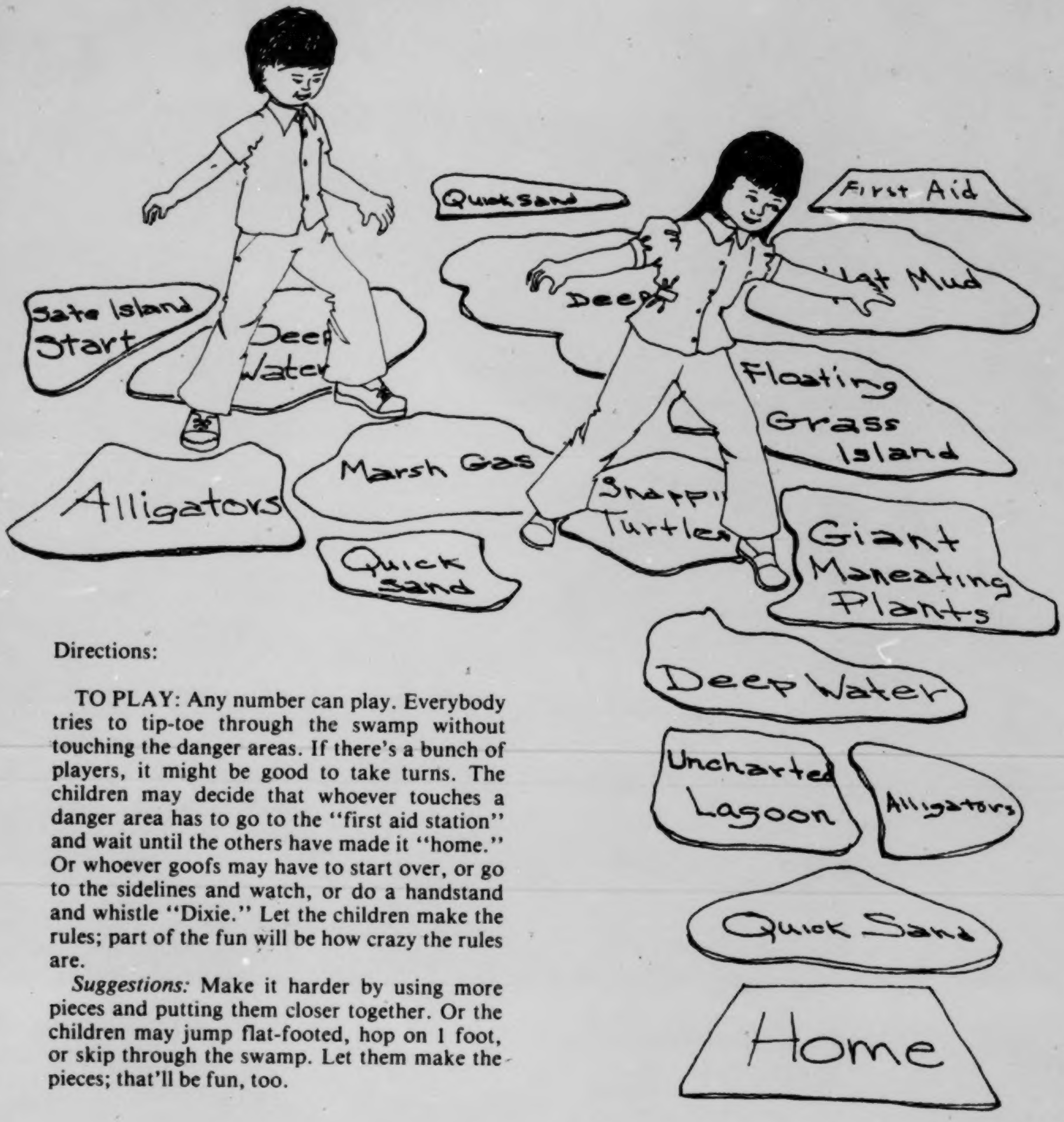
When all players have hopped to their squares, the game pieces are thrown to the next row of numbers. If a game piece lands outside the spiral path, the player gets a second chance; if not successful, the player loses the turn. A player also loses a turn by hopping onto a square on which there is someone else's marker.



Journey Through The Swamp

Materials:

Use anything that can be cut or folded into a variety of sizes and shapes, will lie flat, and can be arranged on the floor. For instance, newspapers, grocery bags, magazines, carpet scraps, or cardboard. Areas may be named, as below.


Quick Sand
First Aid
Safe Island
Start
Deep Water
Deep
Hot Mud
Floating Grass Island
Marsh Gas
Alligators
Snappi
Turtles
Quick sand
Giant Maneating Plants
Deep Water
Uncharted Lagoon
Alligators
Quick Sand
Home

Directions:

TO PLAY: Any number can play. Everybody tries to tip-toe through the swamp without touching the danger areas. If there's a bunch of players, it might be good to take turns. The children may decide that whoever touches a danger area has to go to the "first aid station" and wait until the others have made it "home." Or whoever goofs may have to start over, or go to the sidelines and watch, or do a handstand and whistle "Dixie." Let the children make the rules; part of the fun will be how crazy the rules are.

Suggestions: Make it harder by using more pieces and putting them closer together. Or the children may jump flat-footed, hop on 1 foot, or skip through the swamp. Let them make the pieces; that'll be fun, too.

Jumpers

Materials:

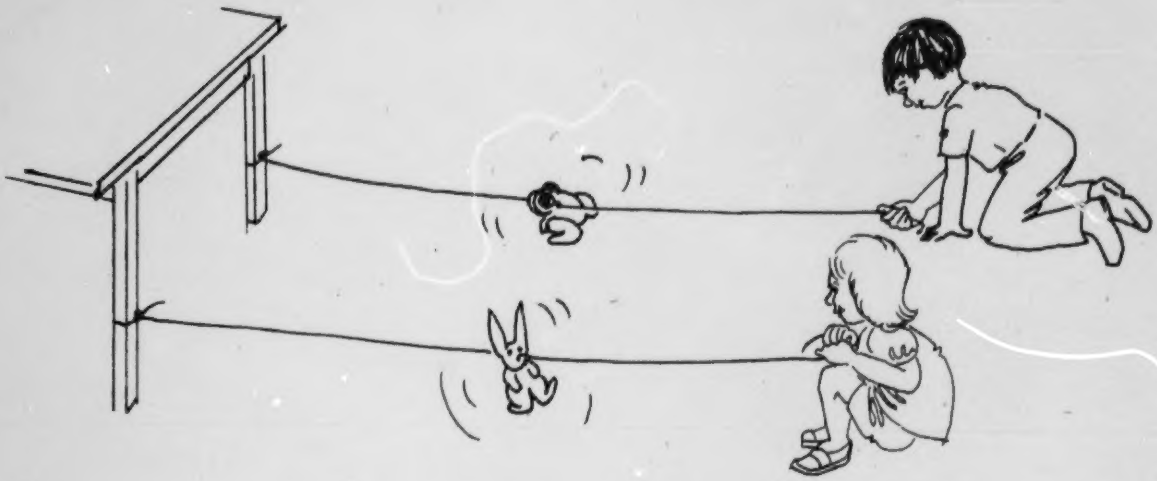
- stiff piece of cardboard
- strong string, 10 feet long

Directions:

Design the jumpers in any shape desired - frogs, rabbits, cars, or some fanciful shape. Draw the shape approximately 6 inches high and 3 inches wide on the cardboard and cut it out. Punch a hole about 2 inches from the top.

TO PLAY: Tie one end of the string to a table or chair leg at about the same height from the floor as the height of the cardboard jumper. Thread the string through the hole. The bottom of the jumper should be just touching the floor. By pulling and letting go, pulling and letting go, the jumper will hop forward.

With a little practice, children will be able to make the jumber flip and hop back.



Jump Rope

Jump rope games have been popular a long time, maybe because ropes have been needed for home, farm, and ranch, and were available for children to play with.

Materials:

- 1 10-foot length of rope for group play
- 2 10-foot lengths for a double rope
- a shorter length of rope for each individual jumper (sashcord #8, hard twist manila, or heavy cotton clothesline)

Directions:

Jump one at a time until a mistake is made. Or several may jump at once.

Highest Water — Swing the rope so it barely misses the ground. Then gradually raise it until the players have to jump as high as they can.

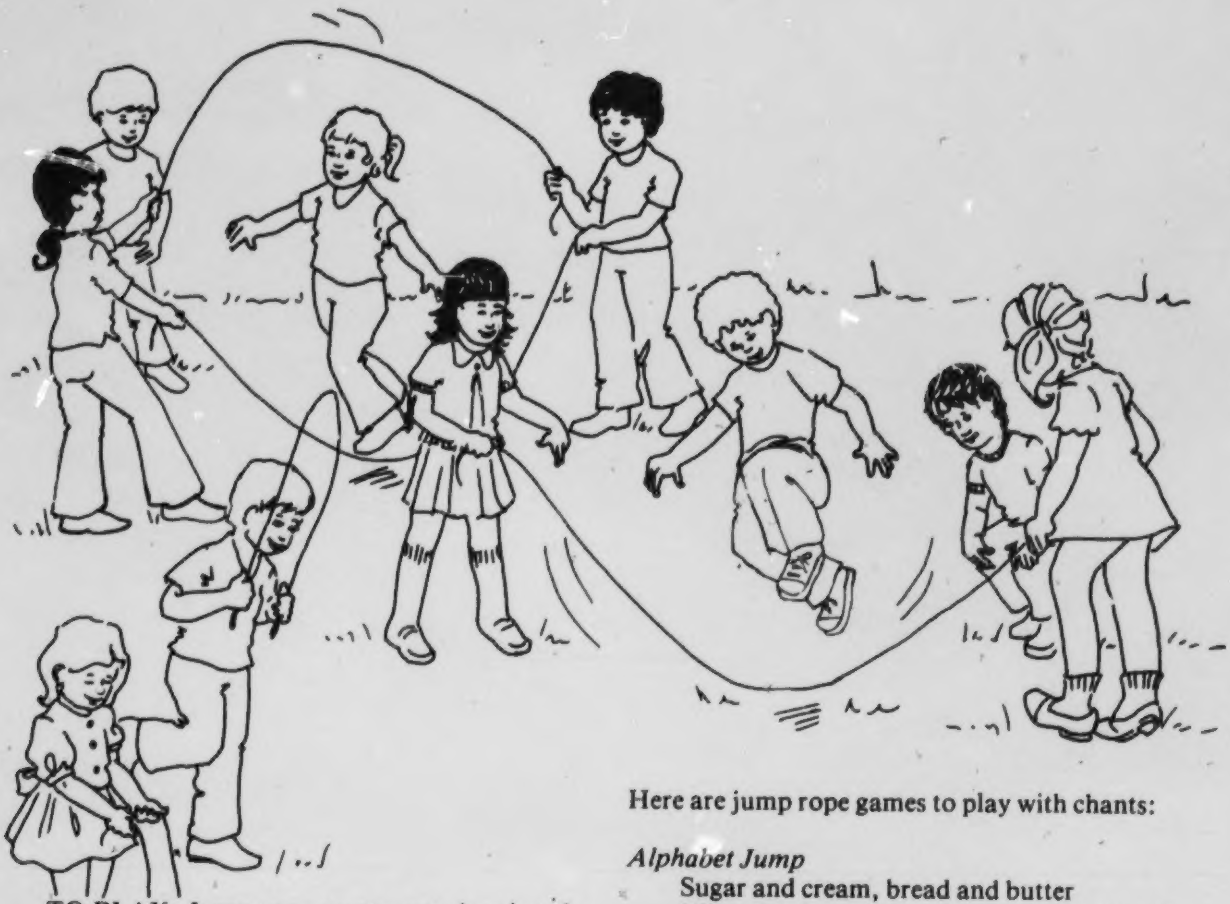
Double Rope — Use two ropes. The swingers hold a rope in each hand and make the ropes touch the ground alternately.

Hot Pepper — When the jumper starts, the others chant, "salt, mustard, vinegar, pepper." At the word "pepper" they swing the rope faster and faster until the swingers or the jumper can't continue.

Run Through — Run through a swinging rope without jumping.

Rock the Cradle — Swing the rope back and forth about 4 inches from the ground, but not in a complete loop.

Name Jump — Somebody runs in, jumps once, then calls the name of the next person in line during the second jump. They jump twice together, then the first jumper exits. It's a goof when somebody besides a swinger touches the rope, doesn't enter or exit at the right time, or doesn't call out the name of the next jumper according to the rules.



TO PLAY: Jump rope games may be played in groups or alone, briefly or for a long while, on different surfaces, and with or without a change. Depending on how they're played, they may be easy or hard. It's harder, for instance, when double ropes are used.

Chants or songs can determine who jumps, the number and type of jumps, speed, when to enter and exit, and the rhythm for jumping. Here are some chants:

Oh in I ran and around I go,
Clap my hands and nod just so;
I lift my knee and slap my shin;
When I go out, let (name of next jumper) in.

At the beach the waves will reach
higher - higher - higher (raise rope higher and higher)

Down by the river, down by the sea,
Mary went fishing with Daddy and me;
How many fish did Mary get?
One, two, three, four, five . . .
(until a miss or a certain number is reached)

Here are jump rope games to play with chants:

Alphabet Jump

Sugar and cream, bread and butter
What is the name of my good friend?
A,B,C,D, etc.

The jumper enters and, after a few jumps, everyone begins reciting the alphabet, pausing after each letter for the jumper to name a word beginning with that letter while making the next jump. The jumper tries not to goof up the jump or the word.

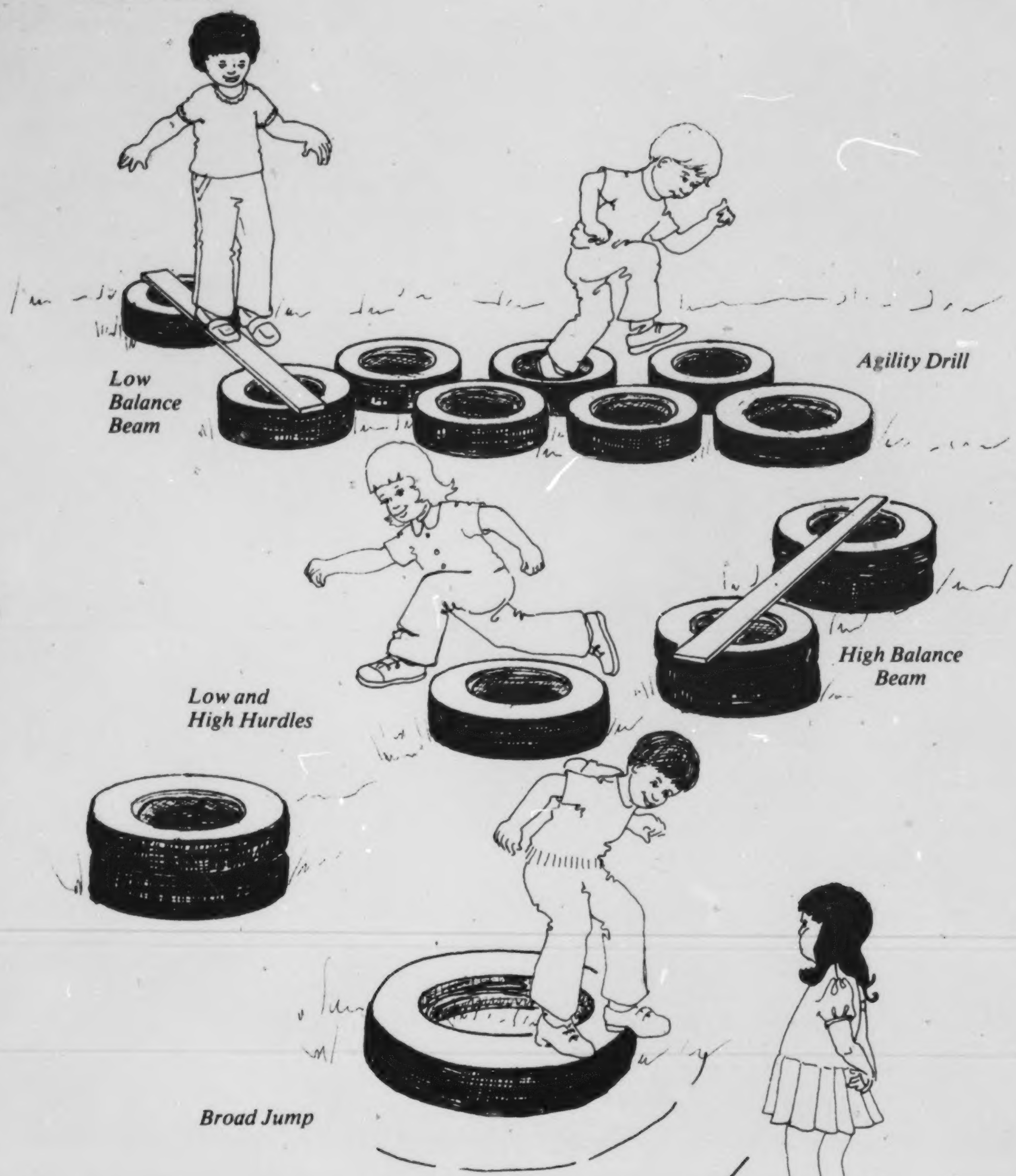
Stunt Jumping

The jumper enters, jumps twice and chants the following, doing all stunts while naming them, then jumps twice more and exits.

One, two, touch my shoe; three, four, touch the floor;
Five, six, criss-cross sticks (crossed leg jump);
Seven, eight, double rate (4 quick jumps);
Nine, ten, out again!

One, two, touch my shoe; three, four, out the door (jumps out);
Five, six, come back quick (jumps back in);
Seven, eight, under the gate (crouched);
Nine, ten, out again!

Obstacle Course


Low
Balance
Beam
Agility Drill
High Balance
Beam
Low and
High Hurdles
Broad Jump

Obstacle Course

On the preceding page, children are shown on an obstacle course they made themselves.

Materials:

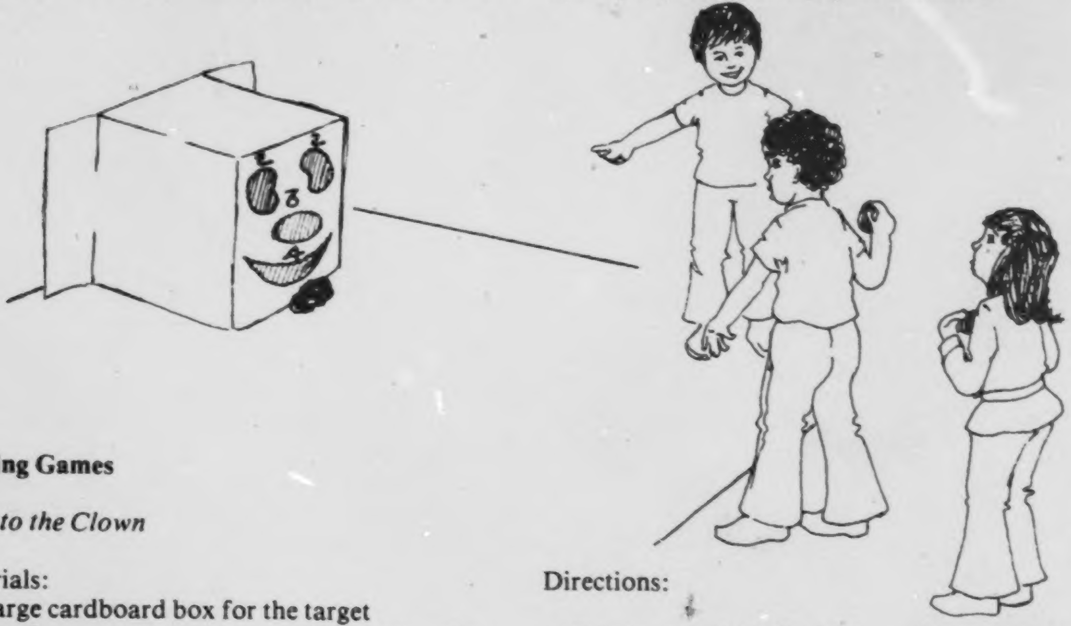
- 2 boards, 2 inches by 4 inches or 2 inches by 6 inches
- 16 tires, different sizes
- something to mark how far players jump

Directions:

TO PLAY: Any number can play if there's a little space between them. The children can make the balance beams by placing boards on tires (see picture). Make the beam higher by putting it on stacks of tires. The children may want to make the game more difficult by walking across the beams backwards or with their eyes closed.

The agility drill can be played like the picture shows, the children can make up rules for it too. For instance, they could make it a race by having someone time them. Or, they could decide either not to touch any of the tires, or to jump from tire to tire without touching the ground.

The tire used for the broad jump (see picture) can be the base-line for a flat-footed jump. For high jumps, the crossbar must be lightweight and easy to knock off. Old poles, pieces of cane, and tightly rolled newspapers will work.



Pitching Games

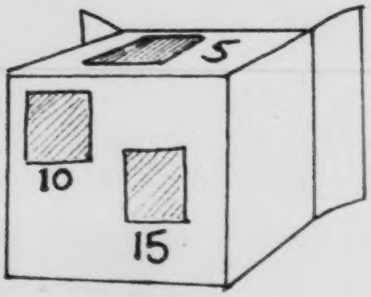
Pitch to the Clown

Materials:

- large cardboard box for the target
- markers or crayons to color and write numbers on the targets (see drawings)
- pitching bags or stuffed balls to throw

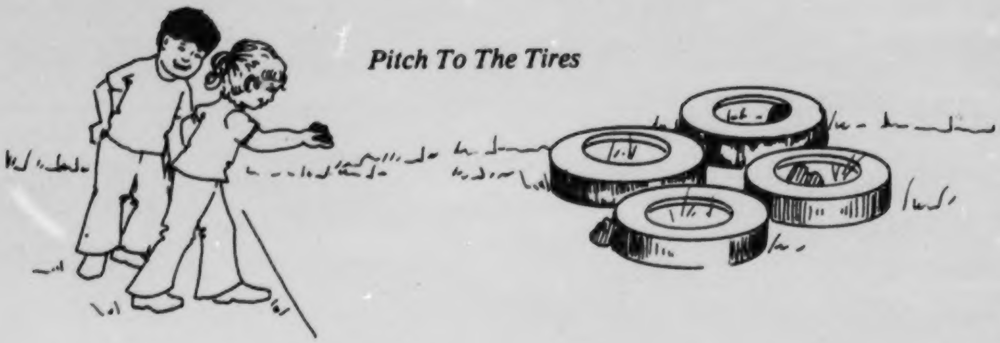
Directions:

Cut out openings in the box. (See drawings.) Make the pitching bags or stuffed balls as shown in "Aids to Games." Be sure they'll go through the holes easily.

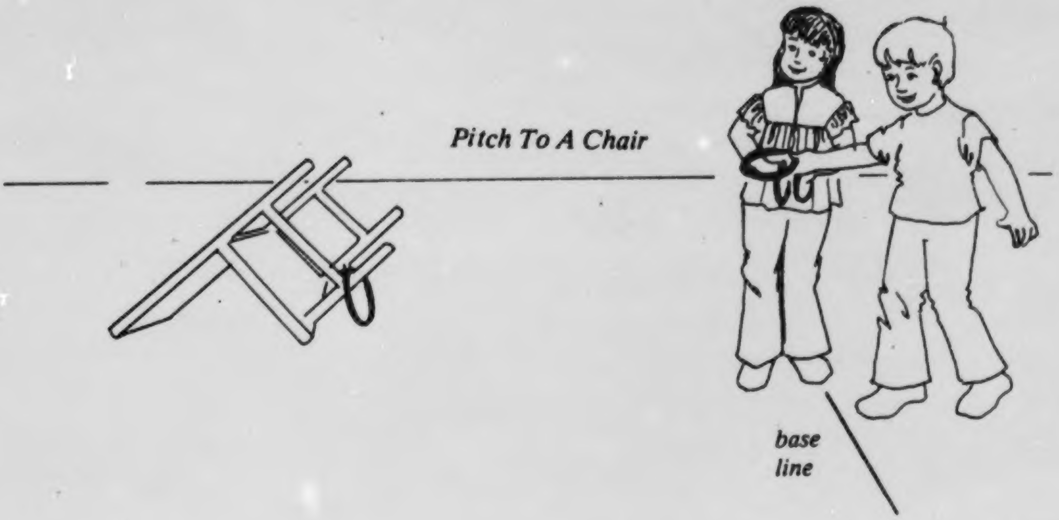


TO PLAY: Players throw from a base line. The score can be kept in several ways. The winner can be whoever has the most points after one turn or the first person to reach 100. Teams or individuals can play.

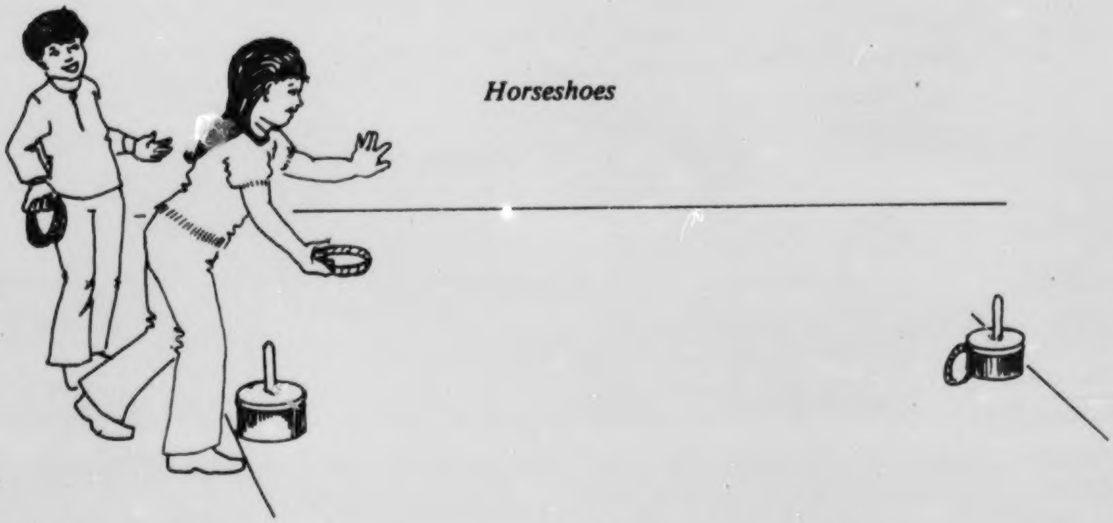
Suggestions: Pitching games can be made easier or harder by changing target values, the types of pitching pieces, or the distance from the base line to the target. See "Aids to Games" for suggestions for the game pieces and how to make a base line.



Pitch To The Tires



Pitch To A Chair

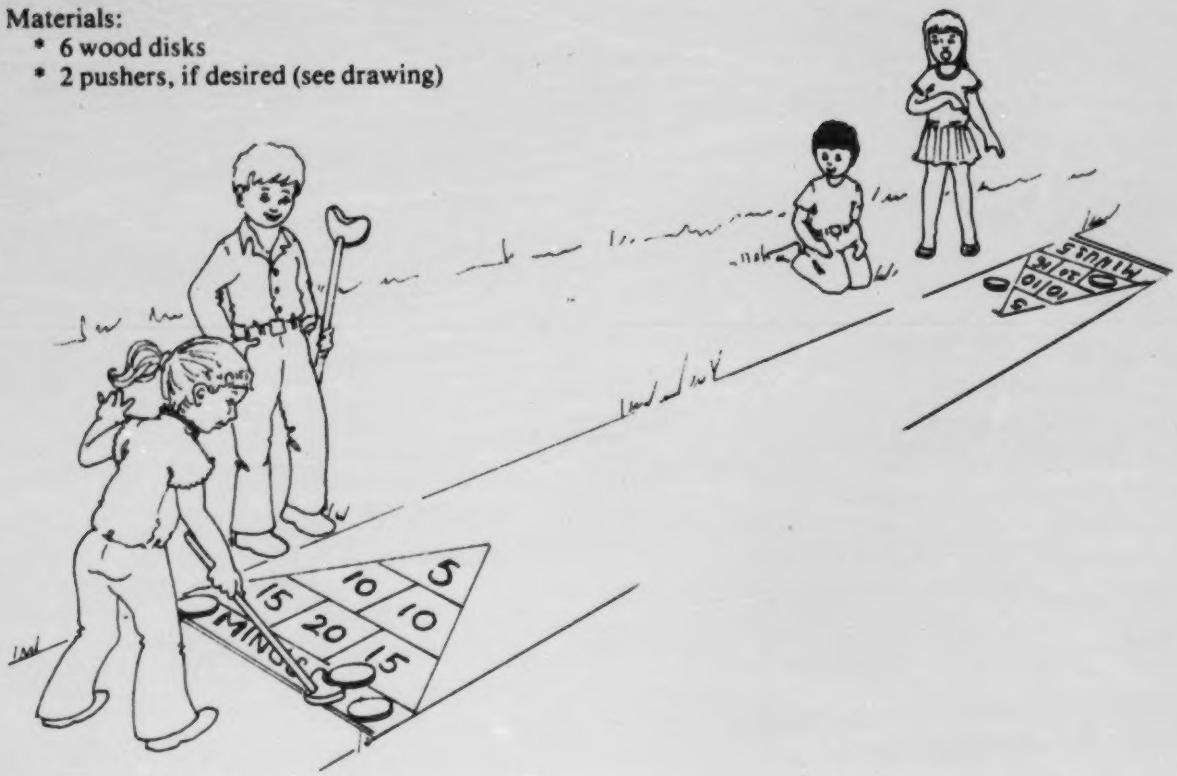


Horseshoes

Shuffleboard

Materials:

- 6 wood disks
- 2 pushers, if desired (see drawing)

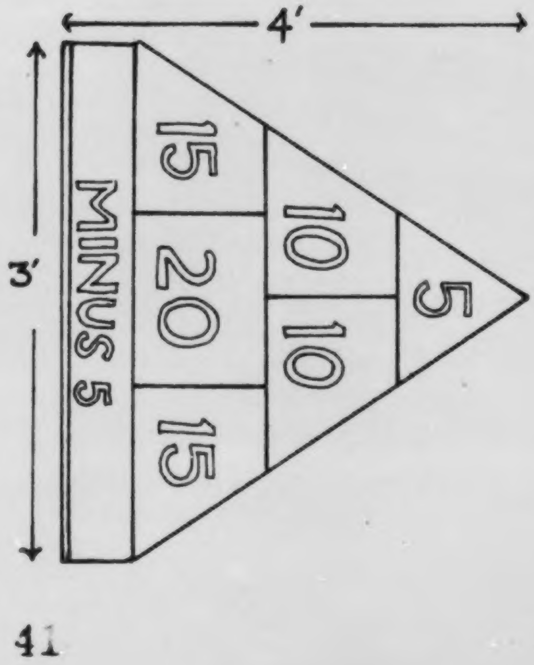


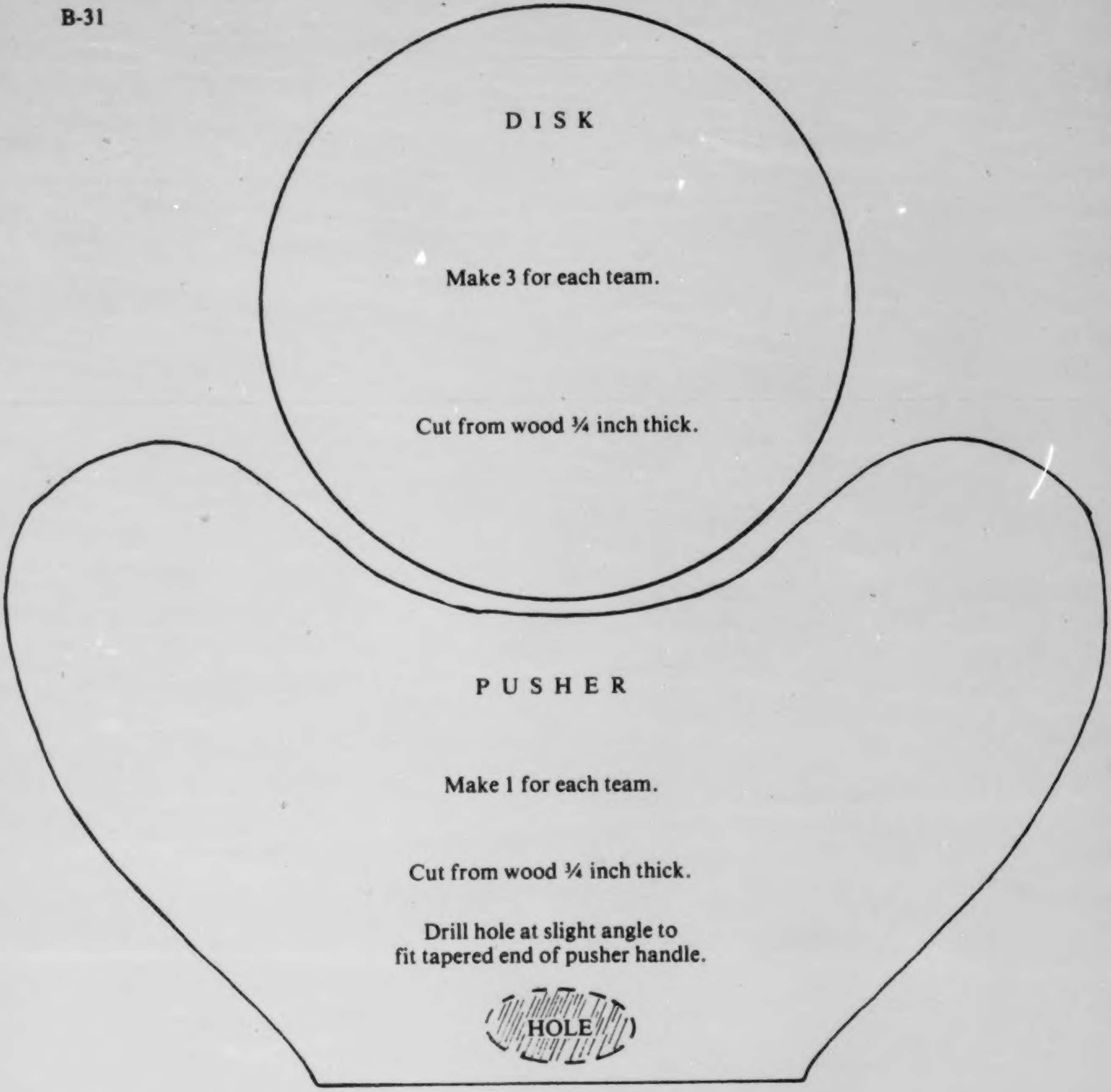
Directions:

See the next page for directions on how to make the materials. Targets may be drawn and numbered, as shown, on the floor or sidewalk.

TO PLAY: There are 2 teams of 2 players. Each team has a player at either end of the play area, behind the double lines. A player pushes a disk toward the other end, trying to make it stop on a high number. Then the other player at the same end takes a turn. Each gets to play 3 disks, taking turns. Besides trying to score, each tries to knock the other team off the target. Anyone who steps on or over the double line loses 5 points. Disks have to be more than half inside a numbered target to be counted. When finished, the 2 players add up their scores. Then the players at the other end take their turns. When the game's over, the team with the highest score wins.

Shuffleboard also can be played alone, or with 1 other person.





DISK

Make 3 for each team.

Cut from wood ¾ inch thick.

PUSHER

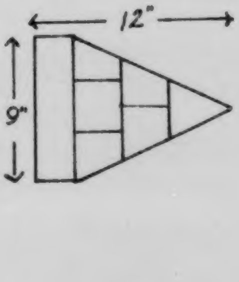
Make 1 for each team.

Cut from wood ¾ inch thick.

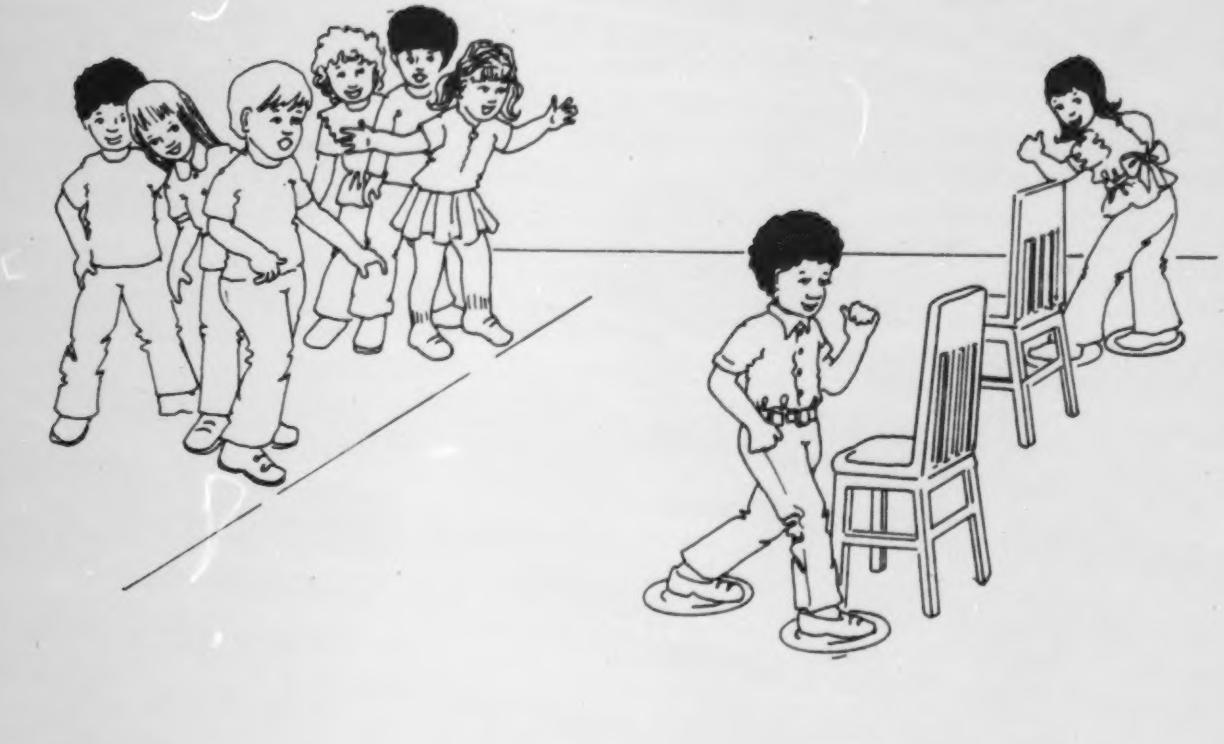
Drill hole at slight angle to
fit tapered end of pusher handle.

For the handle, use part of a broom or mop handle. Taper one end. Sandpaper edges of disks and pushers, and finish with varnish or enamel. Make 3 disks for each pusher. Mark or paint so that each set of disks may be identified.

Suggestions: Make a table game. Draw a target on a piece of composition board or table. A narrow strip of wood or cardboard along the table edges will keep the disks on the table. Wood checkers or metal washers can be used for disks. If desired, pushers 8 to 10 inches long can be cut from cardboard.



Snowshoe Race

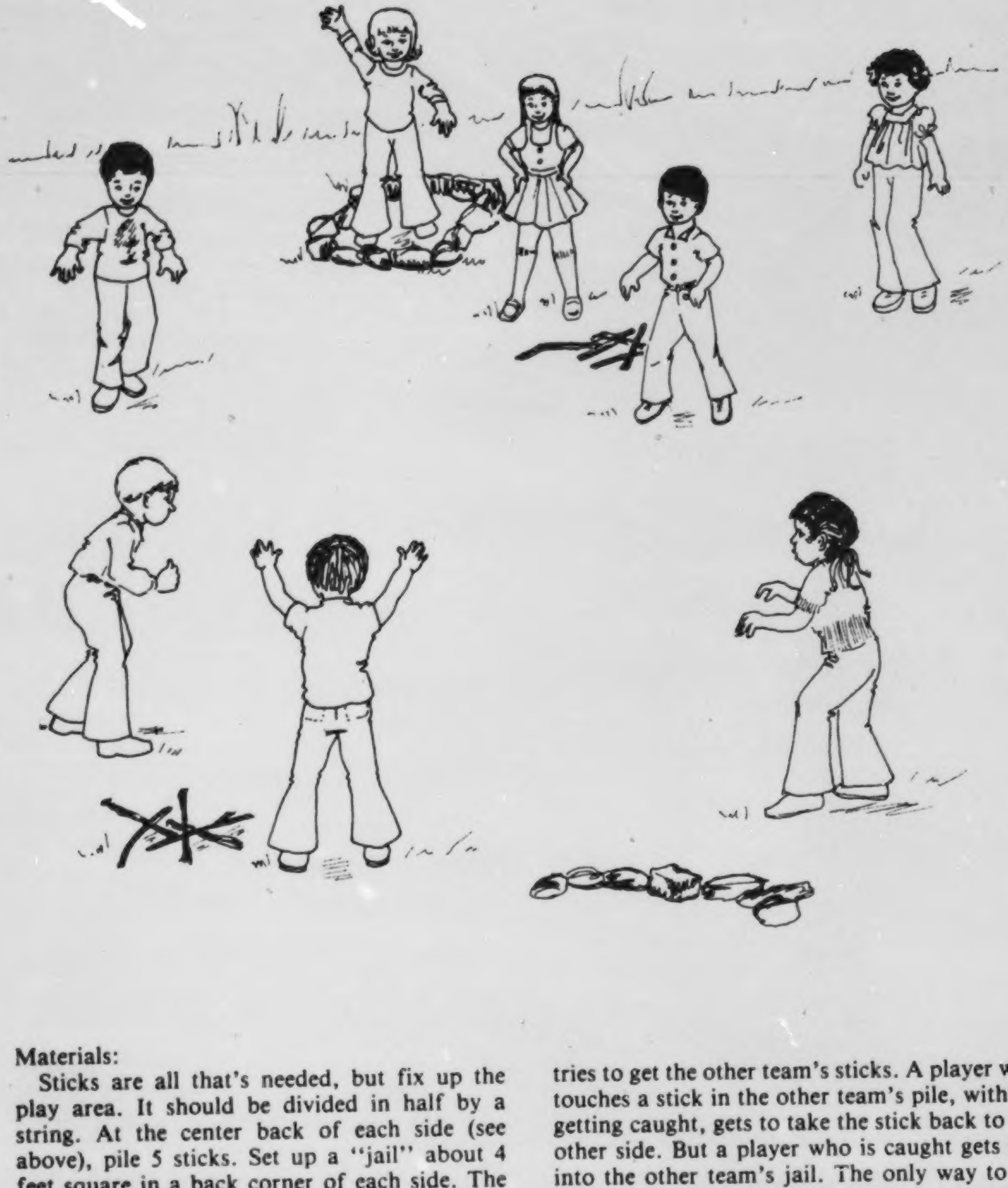


Materials:
- 4 paper plates or 4 box lids to use for snowshoes
- 2 chairs
- something to use as starting line

TO PLAY: The 2 teams line up as in the picture. The first racer on each team gets 2 snowshoes. Somebody says, "Go!" and the first 2 players put their feet into the snowshoes and slide along the floor. No fair using hands. Each racer crosses the room, goes around a chair (as above), and returns. Then a teammate puts on the shoes and goes. The first team to finish is the winner.

Suggestions: The game can be played anytime of the year, inside or outside. To make it harder, the children could go backwards, or always keep their left feet in front of their right feet. For large groups, play with more than 2 teams.

Stealing Sticks

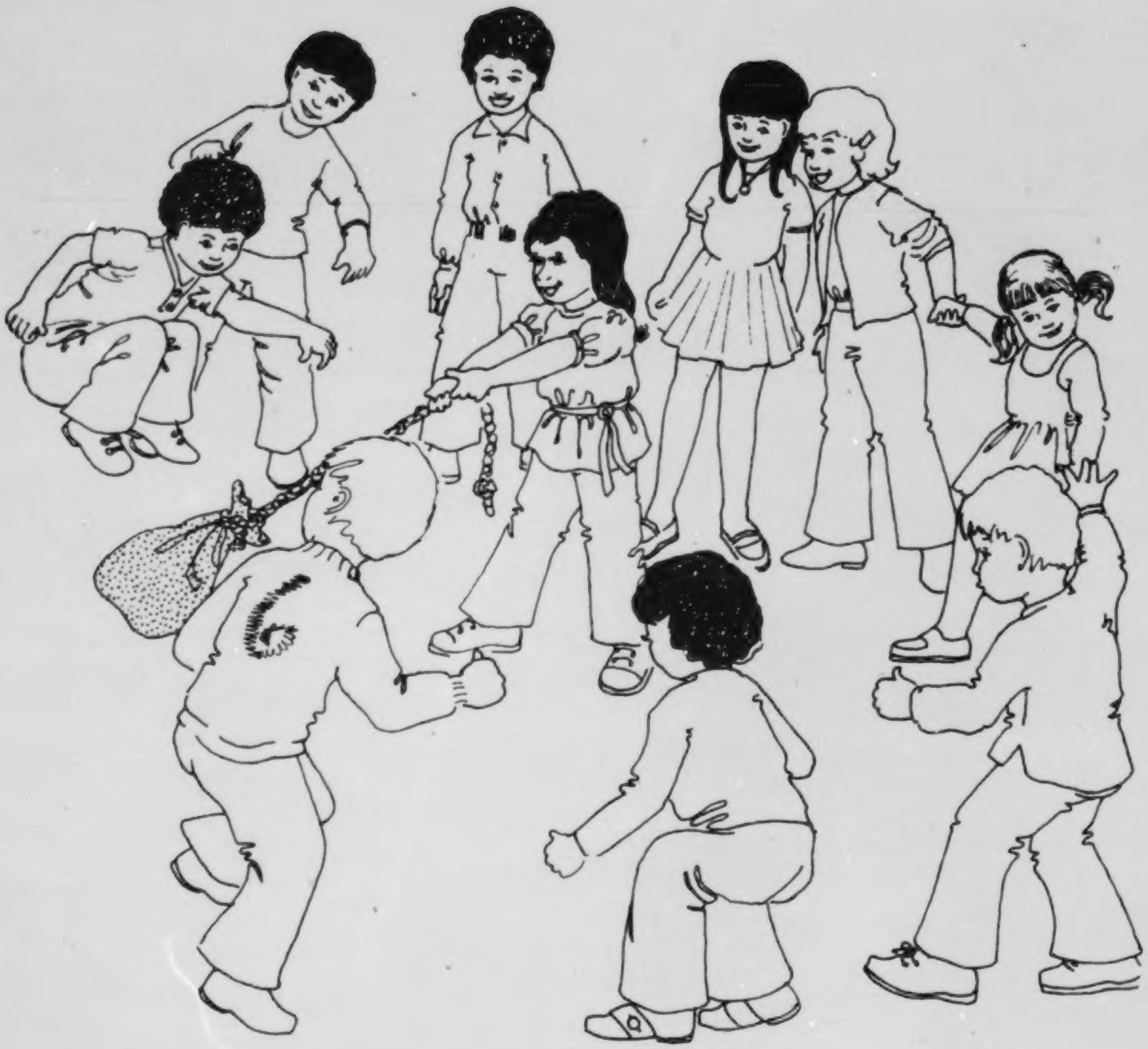


Materials:

Sticks are all that's needed, but fix up the play area. It should be divided in half by a string. At the center back of each side (see above), pile 5 sticks. Set up a "jail" about 4 feet square in a back corner of each side. The children divide into 2 teams, on different sides of the line.

TO PLAY: Any number can play. Each team tries to get the other team's sticks. A player who touches a stick in the other team's pile, without getting caught, gets to take the stick back to the other side. But a player who is caught gets put into the other team's jail. The only way to escape from jail is by being tagged by a teammate. A team wins by being the first to have all the other team's sticks while having no one in jail.

Swing The Sack



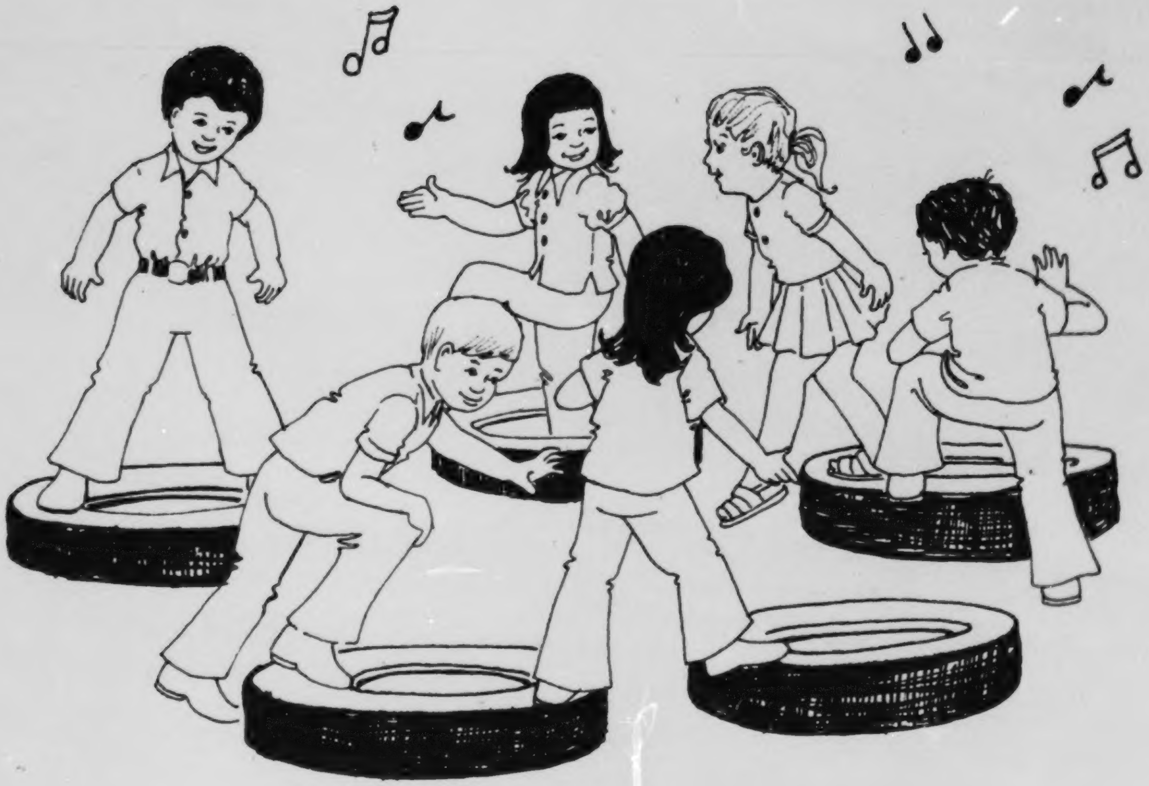
Materials:
- soft plastic sack or stuffed cloth sack, about 18 inches long
- soft rope

Directions:

Tie the rope to the sack as shown above. (See directions for making large stuffed bag in "Aids for Games.")

TO PLAY: Players stand in a circle, arm's length apart. The sack-swinger stands in the center and swings the sack at ankle height. The swinger holds the rope so that everybody must jump to keep from having their feet hit. Whoever the sack touches becomes the new swinger.

Musical Tires



Materials:

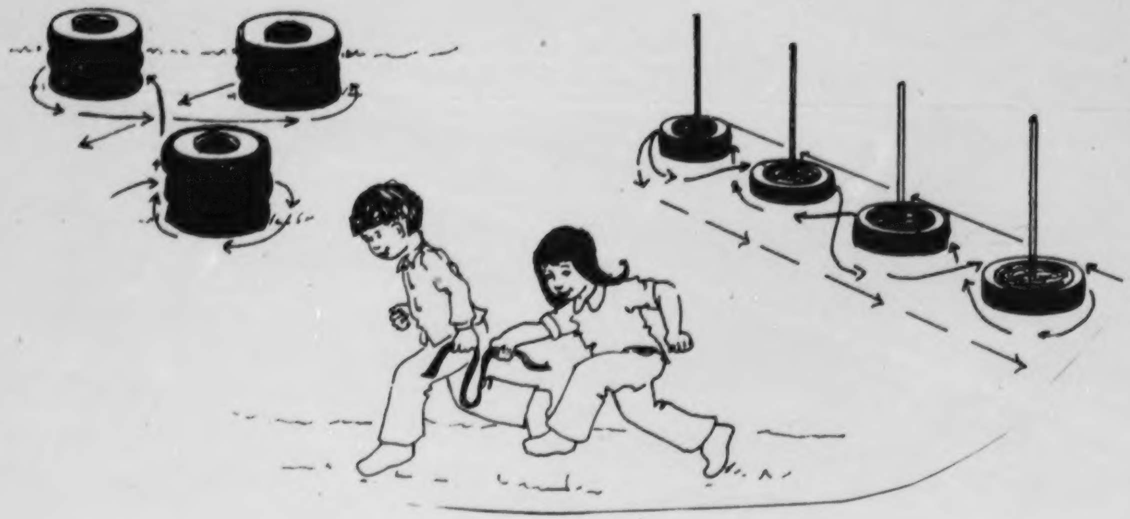
- car or bicycle tires (1 fewer than the number of children playing)

Directions:

TO PLAY: Like musical chairs. The children go around a circle of tires. When the music stops, everyone tries to sit on a tire. (The music could be a record or clapping or whatever.) Whoever is left standing leaves the game and takes a tire. The game goes on until only 1 player is left.

Suggestions: Make it harder by having faster music. Or the children could twirl as they move along. Younger children who might not want to leave the game can play follow the leader around the circle. Make 1 tire the leader's tire. When the music stops whoever is on that tire becomes the new leader. Even younger children will enjoy circling and stopping when the music stops.

A Texas Rodeo



Materials:

- tires to use as barrels, stacked as shown
- tire poles (see "Aids to Games")
- paper streamer, about 2 inches by 36 inches, to use as ribbon

Directions:

The following contests could be the special events of a big rodeo.

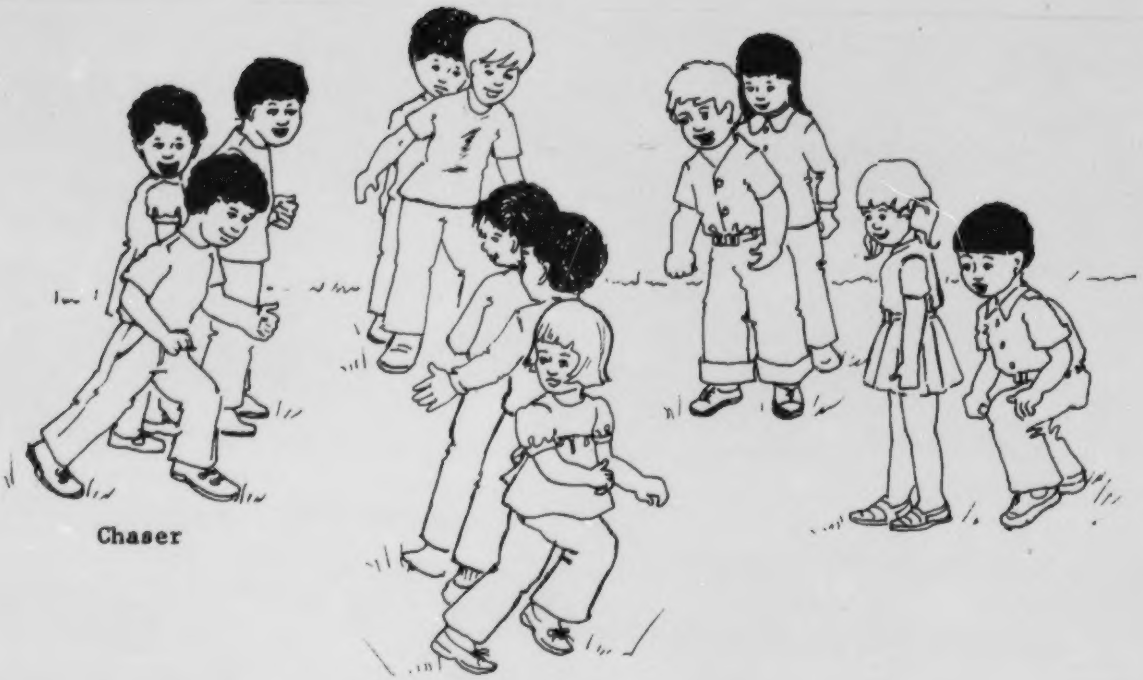
Clover Leaf Barrels: For each team, set up 3 barrels in a triangle. Players run around the barrels in a clover leaf pattern, as shown by the arrows in the drawing. Then they go back to the starting line and the next pair on their team goes. The first team to have everyone finish the race wins. Anyone who doesn't run the pattern right, has to start over.

Pole Bending: Set up 4 or more poles in a straight line — 1 line for each team. A player runs straight along the right side of the poles, turns at the far end, weaves in and out between the poles down and back to the far pole, then returns to the starting line down the left side of the poles. (See arrows in drawing.) Then the next player on that team goes.

Ribbon Race: Set up a pole or barrel for each team at the far end of the yard. Teams divide into pairs and each pair is given a paper ribbon. Each partner holds one end of the ribbon. The pair tries to run around the pole and back to the finish line without dropping or breaking the ribbon. The winning team is the first to have all pairs finish.

Suggestions: Children might choose to pretend they're on horses while running the events — maybe "ride" on stick horses for instance. Others might take up tickets, sell popcorn, furnish music, dress up like the rodeo queen or rodeo clown, or sit in the grandstand. The children might want to invite their parents. Once they learn patterns for the races, they may want to try other patterns, making the games easier or harder.

Three Deep



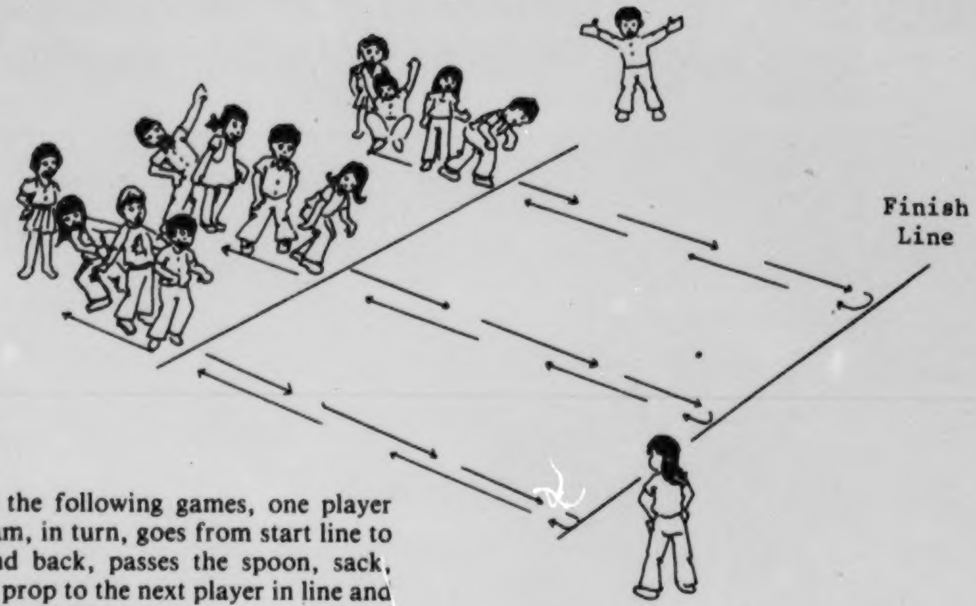
Materials: none needed

Directions:

TO PLAY: Any even number of children can play. All except 2 form a double circle facing inward. (See above.) Each player in the outer circle stands behind a player in the inner circle. The 2 extra players are the runner and the chaser. They start outside the circle on opposite sides.

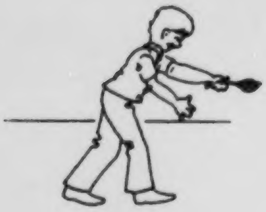
The runner becomes safe by entering the circle and stopping in front of one of the couples. The outer player of that couple then becomes the new runner. If the chaser tags the runner, they change places — the runner becomes the chaser and the chaser becomes the runner. Encourage the children to make any rules necessary to keep the game running smoothly.

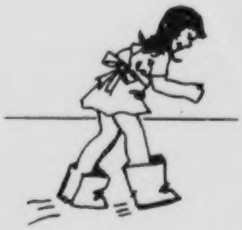
Relay Races

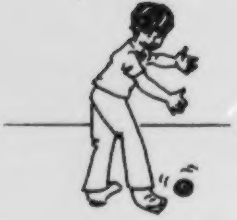


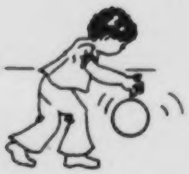
Directions:

In each of the following games, one player from each team, in turn, goes from start line to finish line and back, passes the spoon, sack, ball, or other prop to the next player in line and goes to the back of the team's line. A team wins by having all its players finish before all the other team's players finish.









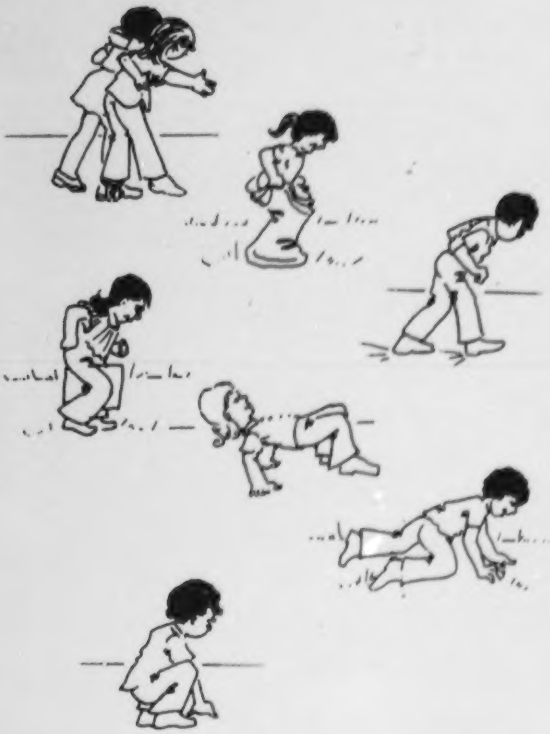
Materials: (Each race requires different materials.)

Spoon Race: The players on each team take turns carrying a spoon with something in it (small rock, peanut, etc.). The team must carry the same thing in their spoons that other teams are carrying. Players must carry the spoon in one hand. If the object falls out, the player picks it up, puts it back in the spoon, and continues the race.

Shuffle Race: Players race with paper bags, plastic buckets, baskets, or large men's shoes on their feet. Each player shuffles to the far line and back to the start, then takes off the bags, or whatever, and the next player puts them on and starts out. If a foot comes out, the player must get it back into the bag before going on. Have extra bags if they're likely to tear.

Nudge Ball Race: Each team uses a ball. Balls must be the same size. (Tennis balls work well.) A player nudges the ball along with one foot, hopping on the other foot. If the ball is kicked out of line, the player retrieves it and starts over from where the ball went out.

Dribble Ball: Each team gets a large ball that bounces. The players can dribble the balls as they race (like basketball). Or, younger players can bounce the ball, catch it, then bounce it again.



Three Legged Race: Players need something with which to tie their ankles together — such as a stocking, a man's tie, a strip of cloth, or rubber tubing. Two players from the same team tie their ankles together, as shown in the picture. They race to the far line and back, then untie themselves. The next 2 players on the team then tie their ankles together and start out.

Sack Race: Each team uses a gunny sack. A player gets in the sack, as shown, and races by hopping.

Pony Race: Each player races by always keeping the same foot in front of the other foot.

Kangaroo Race: Each team uses a piece of cardboard. Players jump with the cardboard between their legs.

Crab Race: Each player races in the position shown in the picture, and goes feet first.

Lame Dog Race: Each player races in the position shown in the picture. The leg sticking out must not touch the ground.

Rabbit Race: Each player races in the position shown in the picture, and jumps like a rabbit.

Other Action Games

Using Balls

Pass the ball around a circle of players, handing it off or tossing it frontwards, backwards, between legs. Or sit in a circle and pass the ball around. Or have more than one ball going around the circle at once. Another circle game is "center catch." A circle of 5 or 6 players face the player in the circle's center. Whoever's in the center throws the ball to those in the circle - one after another - and they throw the ball back. After everyone's handled the ball, somebody new can be in the center. Or, the player in the center could try to surprise whoever the ball is tossed to. Then whoever drops the ball must be in the center.

Stand in single file with legs wide apart. The last person in the line rolls the ball between everybody's legs up to the first person in line. The first person then throws the ball over everyone's head back to the rear of the line. Meanwhile, whoever was at the end of the line goes to the front.

Of cource, there are all kinds of ways to play catch. Let the children make up rules, if they want.

Using Rag Roll-Ups

The players stand in a circle facing clockwise. They drop the roll-ups in front of their feet, then everybody hops over the roll-ups until they're back where they started.

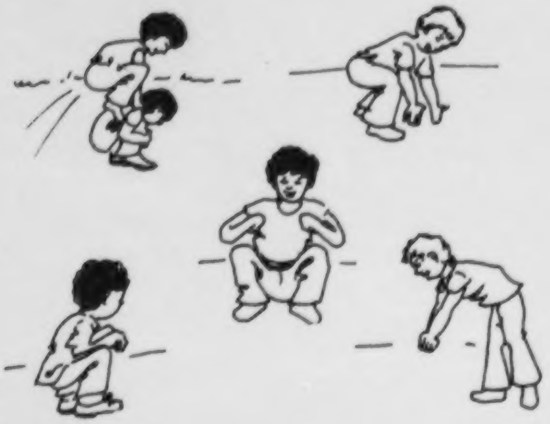
Try to throw the roll-ups through hoops. The hoops can either be facing the thrower or parallel to the ground like a basketball hoop. The players could divide into teams and see which team is first to have all its players throw their roll-ups through the hoop. To make it harder, the players could throw the roll-ups further.

Playing Animals

There are many ways to walk like animals. Here are some.

Leap Frog: Everyone lines up single file about 3 feet apart, with hands and knees on the ground. The last one in the line leaps over the others and then squats down again after reaching the front of the line. The next player at the end of the line goes next.

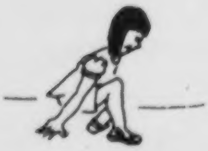
Bear Walk: Crouch with hands and feet touching the ground and walk like a bear, swaying from side to side.

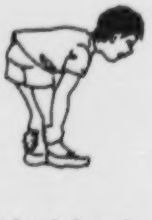


Bunny Hop: Bunnies hop on both feet with their forearms extended.

Duck Walk: Squat with knees wide apart and hands under armpits like wings. Swing feet wide to the side with each step.

Elephant Walk: Bend forward at the waist. With hands together like a trunk, walk and swing arms from side to side.

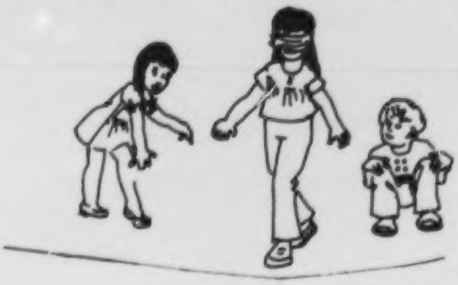




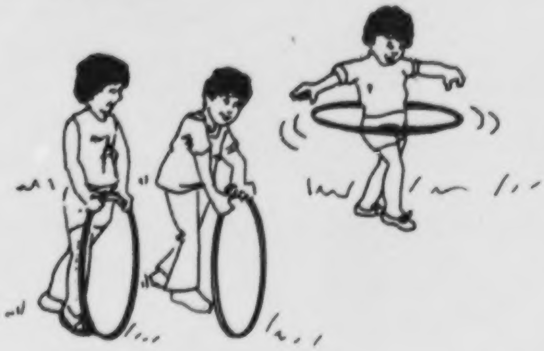
Crab Walk: Squat and put both hands on the floor behind the hips. Keep back straight so that seat is off the floor. Walk forward by lifting hands and legs.

Ostrich Walk: Bend at the waist and grab both ankles. Walk with legs fully extended.

Caribou Stalking: Whoever is the "caribou" is blindfolded and stands in the middle of a large circle of players. The players take turns trying to sneak up on the caribou without being heard. When hearing a sound, the caribou points toward the person and says "there." Whoever gets caught becomes the caribou. If nobody gets caught, whoever is sitting closest to the caribou is next to be blindfolded.



Hula Hoops: It's easy to invent games with hula hoops, or go through them by jumping, stepping, running, etc. The children could have races while the hoops are around them, either with 1 or 2 people in each hoop. They also can roll the hoops or play with them the regular way – by making the hoop spin around their waists. See "Aids to Games" for directions to make hoops.



Scavenger Hunt — A Favorite of School-agers

Hunts can be lots of fun. They may be made hard or easy, and adapted to any environment. After becoming familiar with the idea some children will spontaneously organize hunts and decide what must be found.

Materials:
- list of items to find
- container (such as a sack) for each team or person)

Directions:

TO PLAY: Divide into teams of equal size. The smaller the team, the more individual participation and interaction there will be. Team members work together to solve clues and complete the hunt. (The ages and experiences of the children helps determine if a team can operate without supervision.)

The group should discuss and agree upon rules regarding:
- area to use;
- time limit, if any;
- protection of environment (so neither plant nor animals will be harmed);
- how to divide into teams;
- respecting others (leaving clues where found - the last team picking them up);
- respecting the property of others (asking permission to enter private property and being careful with the property).

The object is to find as many items as possible on the list. Teams are given identical lists and a container in which to carry the items. A time limit may be set after which the teams compare their finds. The team with the most items is the winner. More important than winning, however, is the excitement created when a team works together.

Scavenger hunts can be adapted for younger children by listing items that are easier to find.

Such a list of items might include the following:

3 small stones
  1 flat
  1 round
  1 rough
4 leaves each from a different type of tree
1 insect skeleton
1 seed pod
2 different weeds, roots and all
1 bird feather
1 ball moss
1 natural object (man-made item like paper, string, glass, etc.)

Each item should be something that can be found in the area. Include a few things that will be hard to find, such as a bird's feather.

A scavenger hunt can be made more challenging by:

1. Listing clues to what the items are, rather than listing their names:
   "a ball that grows on a tree,"
   "the fruit of an oak tree,"
   "a piece of a tree, no longer alive, thin as a finger, long as a foot."
2. Scrambling words, such as:
   1 lipl gbu,
   3 snoycra.
3. Omitting vowels in words, such as:
   1 pll bg,
   3 cryns.

4. Aids for Games

Braiding

Cut pieces of fabric into strips at least an inch wide. Braid them to make ropes, doll houses accessories, or trim. To make a more flexible braid, cut the fabric on the bias, or cut panty hose in a spiral.

Plastic bread wrappers, taped together so joints are staggered along the length of the braid, make good jump ropes.

FIGURE 1

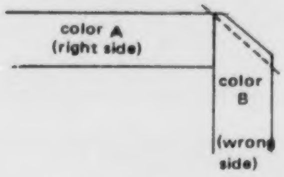


FIGURE 2

FIGURE 3

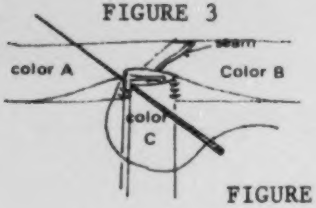
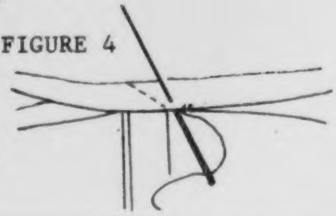
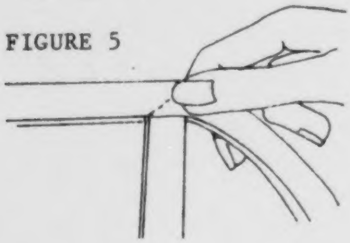


FIGURE 4



Select 3 strips to begin braiding. Join 2 strips with a bias seam (fig. 1). Fold the raw edges of the third strip toward the middle, then fold the strip in half with raw edges inside (fig. 2). Place this strip at the seam of the joined strip and sew in place (fig. 3). Now fold the joined strips into thirds (fig. 4).

FIGURE 5



Place thumb firmly over the seam (fig. 5). Flip strand #1 up and over strand #3. Pull #2 firmly over #1 (figs. 6 & 7). The end should be straight and look the same on the front and back.

FIGURE 6

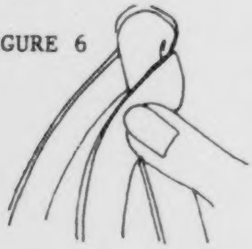
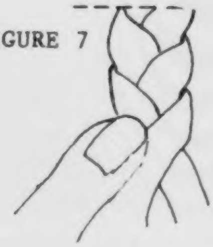


FIGURE 7



Strips will not tangle during braiding if the center strip is rolled and secured with a large safety pin (fig. 8). Unroll the strip as needed for braiding. Tie or pin the started end to a chair and continue braiding (fig. 9). Use a clothespin to hold the braid in place if it's necessary to stop. Continue folding the raw edges inside each strip as described. To finish, tuck in the ends and whip together (fig. 10).

FIGURE 8

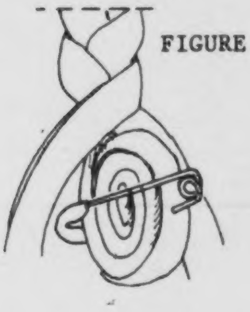


FIGURE 9

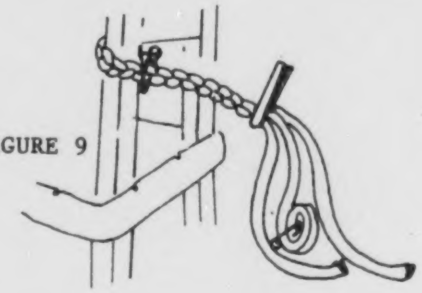
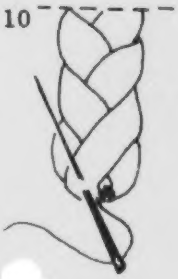


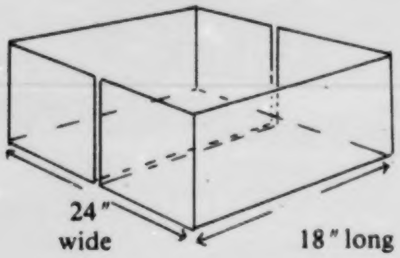
FIGURE 10



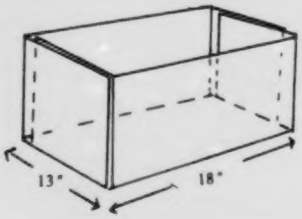
Changing Box Size

Cardboard cartons are useful, free, and usually available in a variety of sizes at grocery stores. But they're not always in the size needed. Here are some ways to change them to the right size.

If the box is the right length (18 inches) but the wrong width (24 inches), cut as shown and push one section inside the other to make the box the right width (13 inches).


24"
wide
18" long

1. Cut box down the sides and across the bottom.

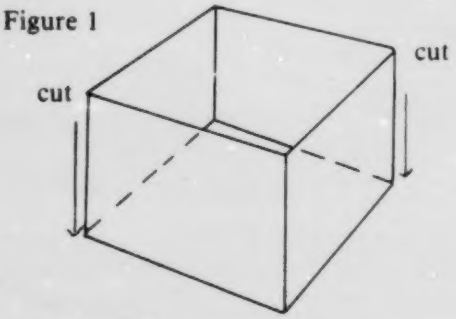


2. Push one piece inside the other.
3. Secure together with tape, string; or glue.

If the box is too long and too wide:

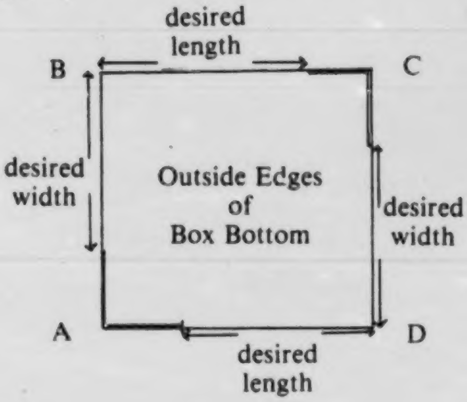
1. Cut down 2 vertical edges (A and C) which are diagonally across from each other (Figure 1).

Figure 1



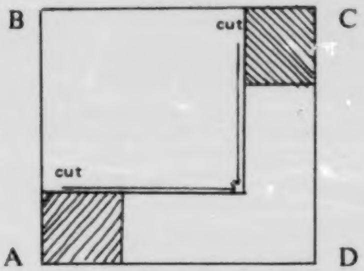
2. Measure the desired width and length from the uncut corners (B and D) and cut along the edge of the box bottom between this measurement and corners A and C (Figure 2).

Figure 2


desired
length
B
C
desired
width
Outside Edges
of
Box Bottom
desired
width
A
D
desired
length

3. Measure the length and width on the bottom of the box (Figure 3). Corner B will have a full-sized bottom attached to it. Corner D will have a partial bottom. Cut as indicated and discard the shaded areas (Figure 3).

Figure 3


B
C
cut
cut
A
D

The flaps extending from the sides are folded in and the 2 sections slipped together. The flaps become the new double corners of the box (Figure 4). Secure together with tape, string, or glue.

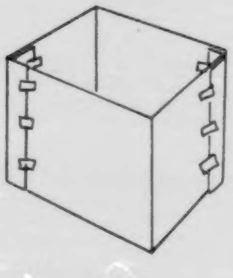
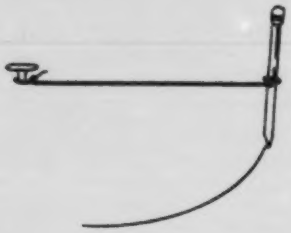


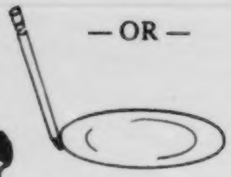
Figure 4

Drawing Circles and Spirals

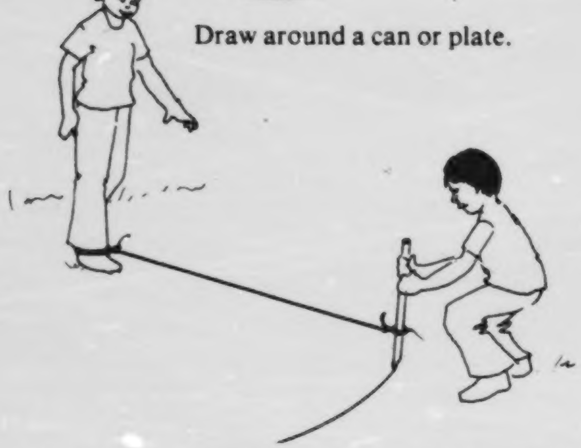
Tie a thread to a pin or thumb tack. Tie the other end to a penc Then draw a circle as shown.



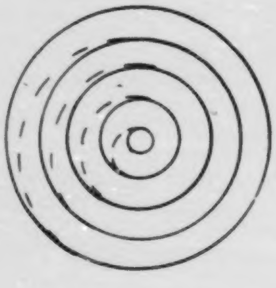
— OR —



Draw around a can or plate.



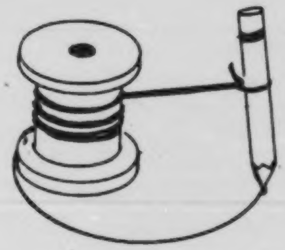
For a big circle, tie a string around a child's ankle, and the other end to a stick or piece of chalk. Draw a circle as the child in the center slowly turns.



For a sprial, draw a large circle with smaller circles inside, equal distance apart. Connect the circles with a dotted line, as shown.

— OR —

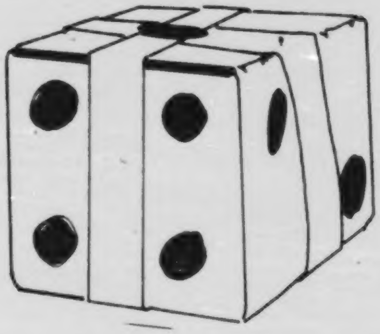
Tie one end of a string to a spool or like-sized object. Tie the other end to a pencil. Wind all of the string onto the spool. Then draw a spiral by keeping the string tight while unwinding it from the spool.



Making Dice

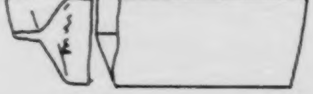
Dice show the number of moves to make on a game board or are used to determine the order of play.

Materials:
- discarded milk cartons (pint or quart size)
- masking tape
- paper stuffing
- felt marker or crayon

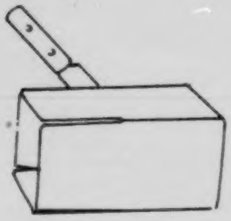


Directions:

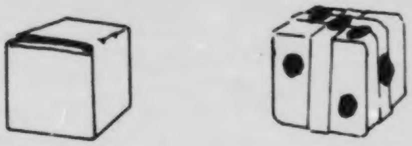
1. Measure the width of the carton. Cut the carton at a height equal to twice the width.



2. Slit 4 corners of carton down half the length. Stuff the bottom half of the carton with paper.



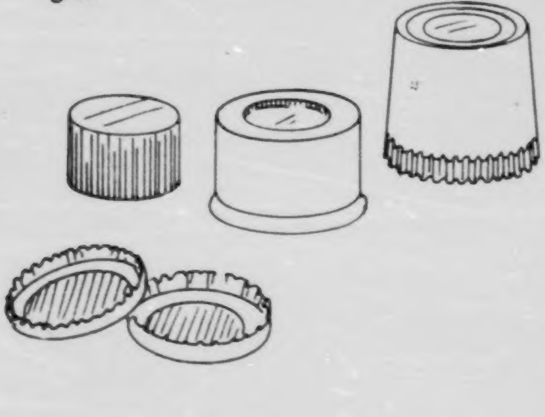
3. Fold down the sides to form a cube.
4. Tape the cube as shown. Mark dots on each side of cube, 1 through 6.



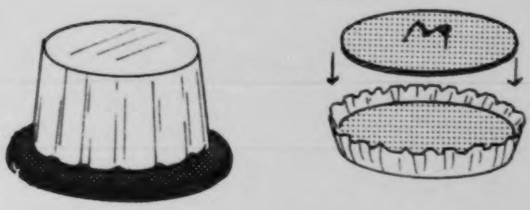
Making Game Pieces

Game pieces may be used singly or in sets for games.

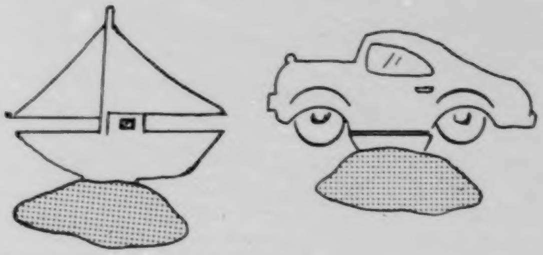
Materials:
- bottle caps from cosmetics, detergents, and soft drinks
- metal washers for weighted pieces
- paper cut-outs, play dough or cardboard
- glue



Soft drink caps are easily decorated by pushing circles of colored paper inside them. mark the players' initials in these circles.



Cut-outs or cars, boats, horses, etc. for a racing game should be glued to cardboard, then stuck onto play dough and allowed to dry until hard.



Making Large Stuffed Bags

A large stuffed bag may be used as punching bag for sack swing or other games.

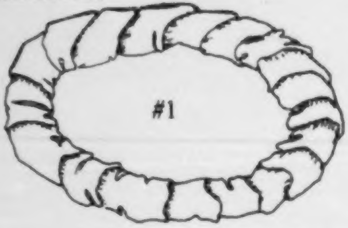
Materials:
- burlap sack, fabric flour sack, or pillow case (or strong plastic trash bags for some of the games)

Directions:

Fill the sack half full of soft stuffing, fabric, panty hose, or paper. Tie it securely with strong cord or rope.

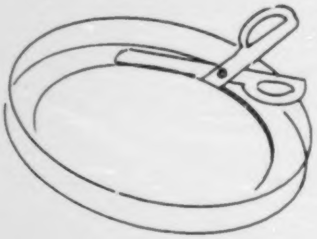
Making Rings

Materials:
- plastic can covers
- fabric

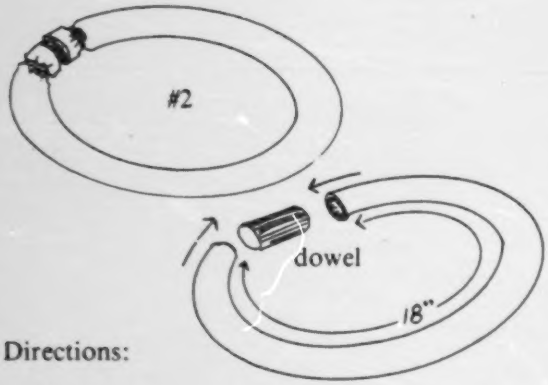


Directions:

Cut the center out of a plastic lid. Wrap the rim tightly with fabric strip. Secure the end of the fabric with glue or sew it into place.



Materials:
- garden hose (small diameter)
- wooden dowel (1½ inches long)
- wire or tacks



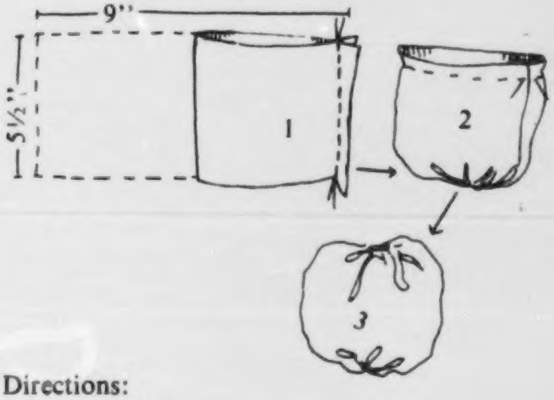
Directions:

Slip dowel into the ends of the hose to form a hoop (dowel should fit snugly). Secure in place with tacks or wrap tightly with wire. Bend in the sharp ends of the wire.

make hula hoops the same way. The hose should be about 7½ feet long.

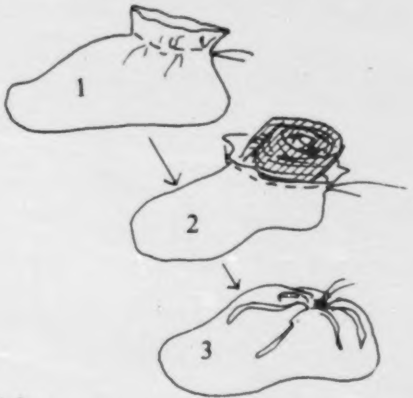
Making Small Balls For Pitching Games

Materials:
- strong stretch fabric
- stuffing (fabric or paper)
- needle and thread



Directions:

1. Cut fabric 9 inches long by 5½ inches wide. Fold in half lengthwise and wrong side out and sew a half-inch seam down the side as shown.
2. Turn right-side-out. Sew a gathering stitch around both open ends. On one end, pull up the gathering thread and draw shut, tuck in the raw edges, and sew shut.
3. Stuff with fabric scraps or crumpled paper. Draw the second end shut and sew.



Materials:
- panty hose, needle, and thread

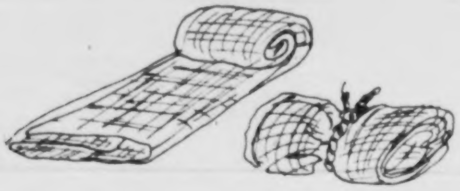
Directions:

1. Cut foot off leg of panty hose. Sew a gathering stitch around the ankle.

2. Roll the other leg into a tight ball and stuff it into the cut-off foot.

3. Draw up gathering stitch. Tuck in the raw edges. Sew securely.

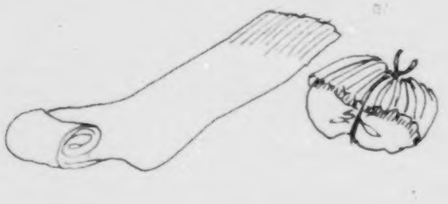
Materials:
- mesh produce bag and string



Directions:

Fold the bag into a long narrow strip. Roll it tightly. Tie it together securely at each end or in the center.

Materials:
- man's sock or child's heavy knee sock
- string



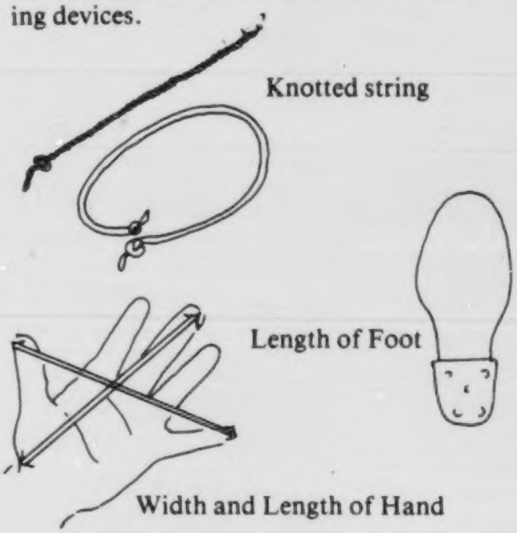
Directions:

Beginning at the toe, roll the sock tightly toward the top. Tuck rolled sock into opening at top of the sock and tie tightly with string.

Suggestions: Colorful, inexpensive mesh-pot scrubs work well for these games. Bean bags can be filled with sand or anything heavy enough to throw and soft enough not to be dangerous.

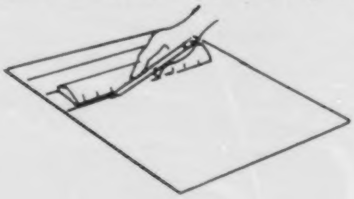
Measuring

Use a ruler, yardstick, or tape measure. Or show the children how to use makeshift measuring devices.



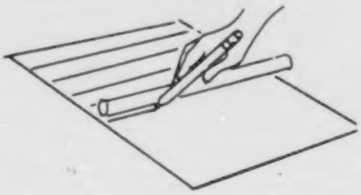
Making Parallel Lines

Draw parallel lines on game boards by making them the width of the ruler apart.



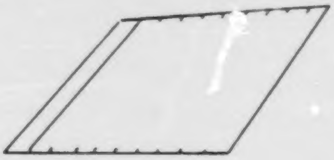
OR

Use a pencil as a straight-edge. Roll it down across the page. Each time it turns to lie flat on one of its six sides, draw a line.



OR

Measure and mark the edges of the playing board. Connect marks with straight lines.



Replacing Puzzle Pieces

Materials:
- plastic wood
- table knife or spatula
- plasic wrap or thin foil

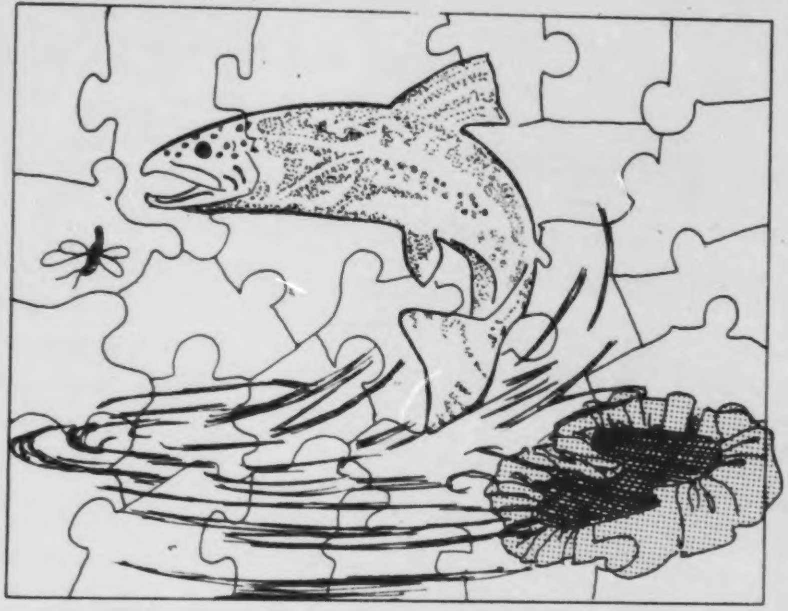
Directions:

Put together the puzzle pieces not missing. Lay a piece of plastic wrap or thin foil over the space where a missing piece belongs, allowing the covering to extend a couple of inches beyond the area to be replaced.

Press soft plastic wood into the open area, level with the other puzzle pieces. Fill the corners carefully. Lay a second piece of wrap over the plastic wood and cover it with smooth cardboard. Weight it down with a heavy, flat object for about an hour. Then carefully remove the weight and strip away the plastic wrap.

When the plastic wood is dry, sand it with fine sandpaper. Then paint it.

Suggestions: Make game pieces and other small items. Use molds or shape by hand.



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DAY CARE
for School-agers

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Homemade Toys and Props

1. Overview

Play is important to children - it is a way of learning. It may seem purposeless, but the child is absorbing, experimenting, exploring, symbolizing, categorizing.

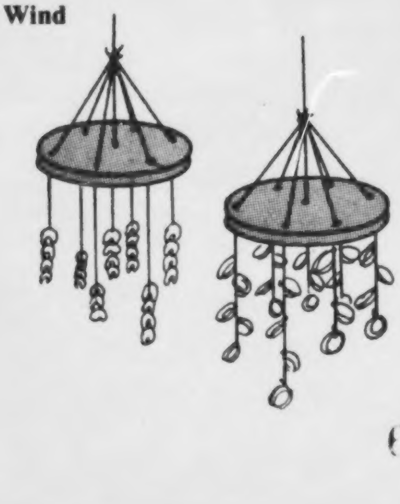
Children need chances to use imagination and creativity. They need freedom to experiment and lots of materials to experiment with. Many materials can be made by the children, as illustrated in this section.

2. Homemade Toys

Children can gain a sense of achievement and pride by making their toys. Making toys can:

- strengthen muscles and help children develop skills;
- challenge the mind;
- satisfy the urge to create and express feelings;
- develop confidence and self-esteem;
- develop teamwork;
- supply learning that can apply to other situations (e.g., inclined planes, pulleys).

Toys In The Wind

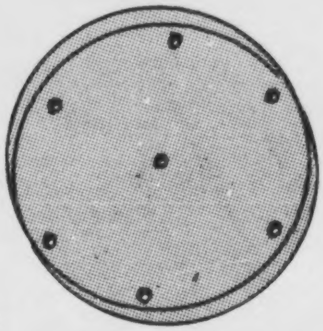


Chimes

Chimes have been made for many years in countries all over the world. In Japan, wind bells of bamboo were hung in gardens to frighten birds away from crops. Chimes made with bottle caps or pull tabs make a pleasant tinkling sound when breezes blow.

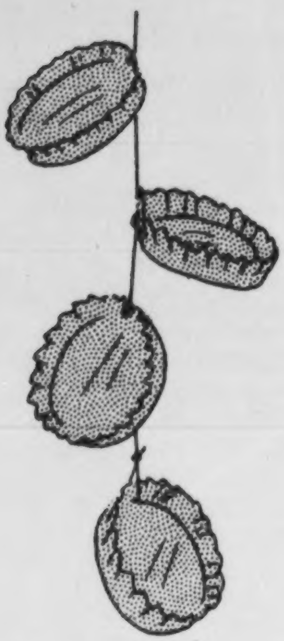
Materials:

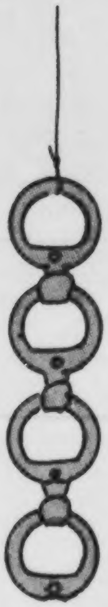
- 7 pieces of fishing line or cord waxed with an old candle, each at least 20 inches long
- hammer and nail
- heavy plastic lid
- 28 pull tabs and/or bottle caps



Directions:

1. Punch a small hole through the center of the lid. Punch 6 holes around the rim, equal distance from the edge and from each other.
2. Use a hammer and nail to punch holes near the edge of each bottle cap. (See below.)
3. Run a piece of cord through a hole in the lid. Tie knots above and below the lid.
4. Run the end of the cord through the hole in a bottle cap up against the knot tied under the lid, then tie another knot in the string just below the cap. Repeat until there are 4 caps on each cord. Prepare 6 more strings in the same way. Tie a knot in each cord 4 inches below the last cap.



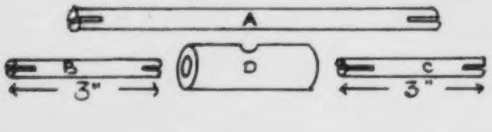


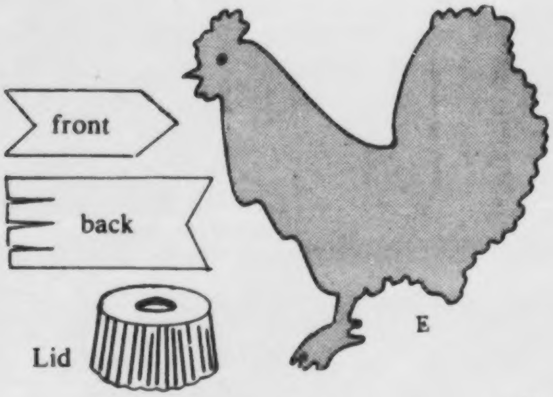
To make pull tab chimes, tie pull tabs on cord as shown. Attach strings to lid as with bottle caps.

Hang the chimes where they will move with the wind.

Weather Vane

Weather vanes show the direction the wind is blowing.



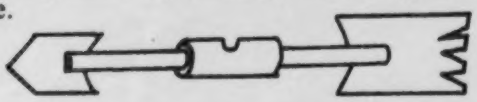


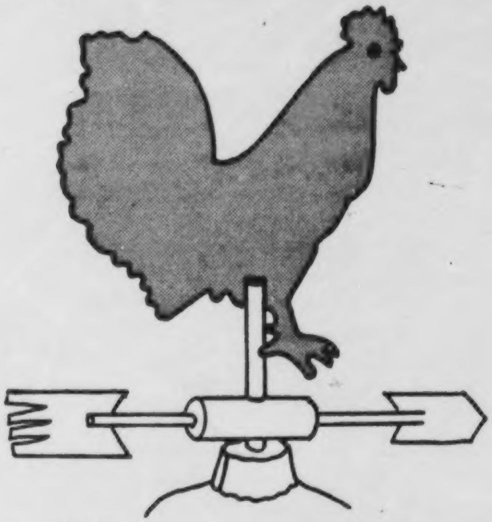
Materials:

- 2 empty plastic bottles (detergent or bleach), or other plastic
- 4 tinker toy parts (as shown)
- glue

Directions:

1. Cut a rooster, horse, or whatever out of plastic.
2. Cut the front and back of the arrow from the rest of the plastic bottle (see picture). Be sure the back is larger than the front so it will catch the wind.
3. For the base, fill a bottle with pebbles, sand, or anything to weigh it down.
4. Make a hole in the top of the base bottle so the long tinker toy stick (A) fits snugly in the hole.



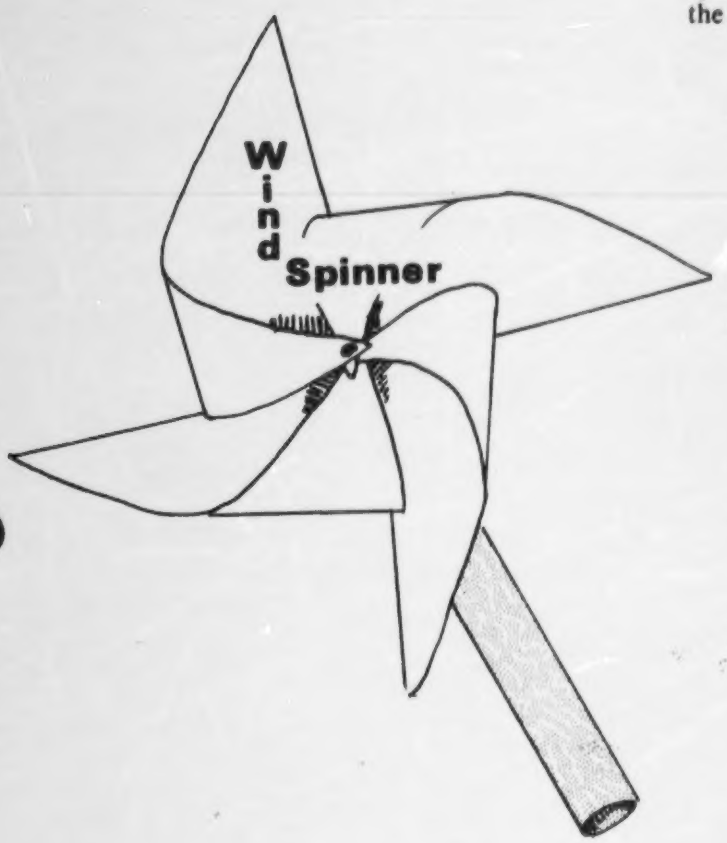


5. Fit one end of each of the remaining sticks (B & C) into opposite holes in the pipe-shaped piece (D). Glue the sticks in place.
6. Slip the arrow parts into the slots in the ends of the assembled tinker toy piece. Glue them in place.
7. Fit the long tinker toy stick (A) through stick (D) and through the hole in the lid of the base down to the bottom of the bottle.
8. Slip cutout figure (E) into the slot at the top of the upright stick. Glue in place.

Set the weather vane indoors in a window or outdoors where there's wind and the children can watch it. School-agers might enjoy keeping a record of wind changes.

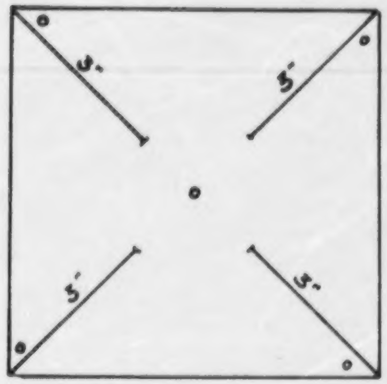
Materials:

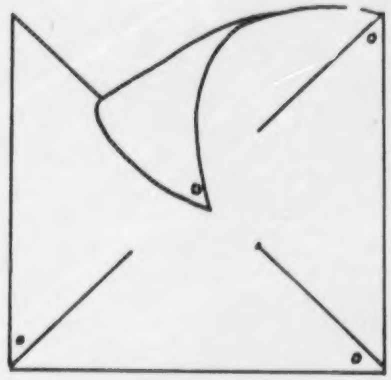
- square of lightweight cardboard, 6 inches by 6 inches
- cardboard tube from paper towels or foil
- large brad

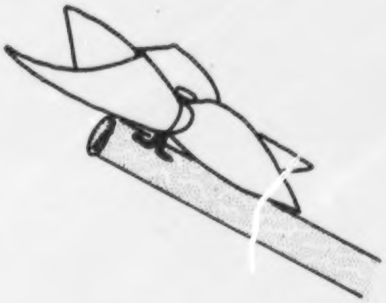


Directions:

1. Draw lines from corner to corner on cardboard square. Measure 3 inches in from each corner (as shown), mark and cut along line from corner to the mark.
2. Punch a hole in 4 of the points, as shown. Punch a hole in one side of the cardboard tube about an inch from the end. If desired, make a washer by folding a 4-inch by 1-inch strip of cloth to a 1-inch square. Push the brad through the center of the cloth.
3. One at a time, bring the points with the holes to the center of the square. Push brad through each hole. When all 4 points are secured by the brad, push the brad through the hole in the center of the square.
4. Push brad through hole in cardboard tube and spread the brad's leg inside the tube to hold spinner securely. Pack a roll of newspaper into the cardboard tube to make the tube stronger.







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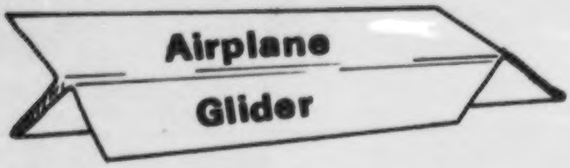
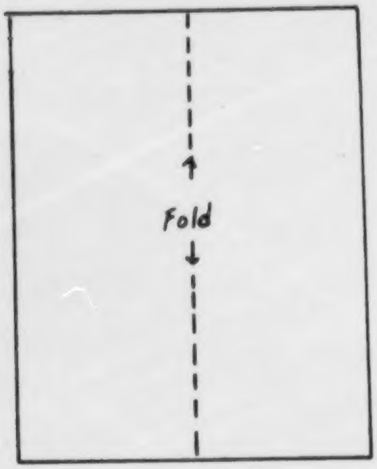
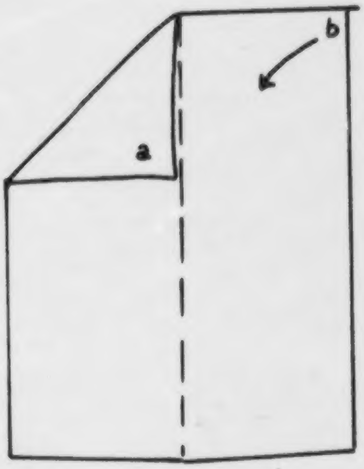
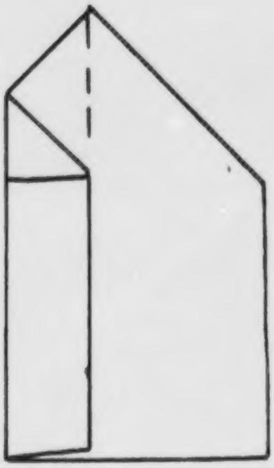


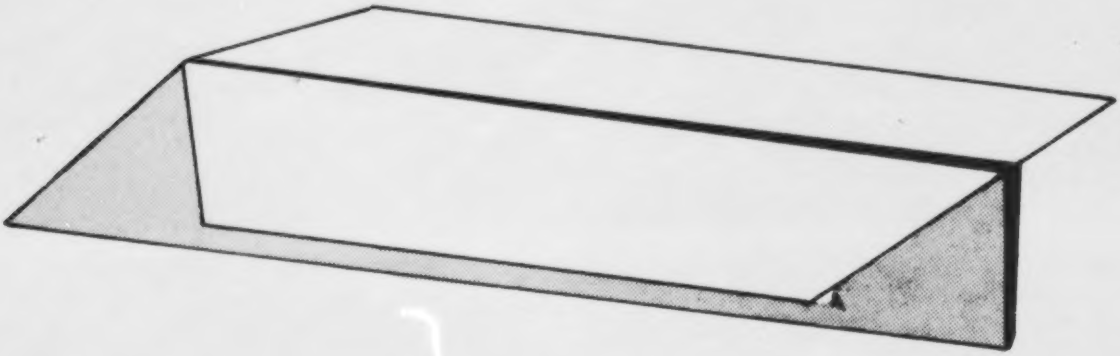
Directions:

1. Fold an oblong sheet of heavy paper lengthwise to mark center.
2. Open paper and fold top corner "a" to center. Repeat with corner "b."
3. Fold side-edge to center. Repeat with other side.
4. Refold center. Fold sides out to form wings. Staple center to form glider body.





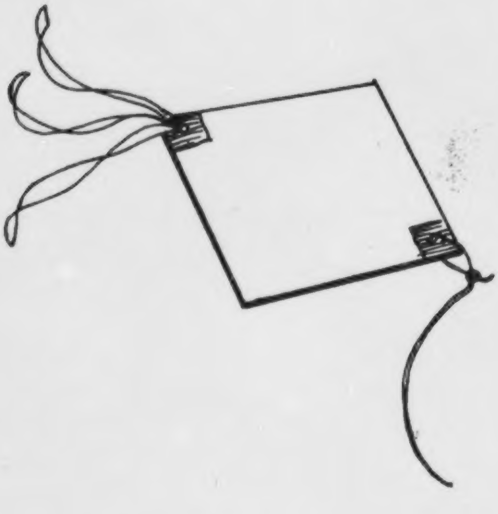




Kites have been used in celebrations in many countries for centuries. They're also used for signalling, photography, archery practice, and obtaining weather information.

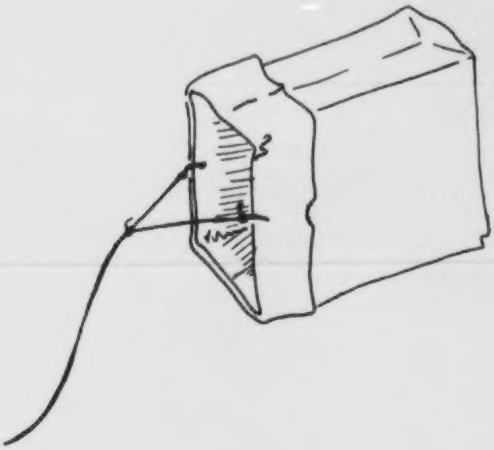
Simple Pull Kite

A square piece of lightweight cardboard attached to a string makes a good pull kite. Reinforce the corner where the string is attached to make the kite last longer. For a fancier kite, add a tail of colorful strips of thin plastic cut from a bread sack.



Paper Bag Kite

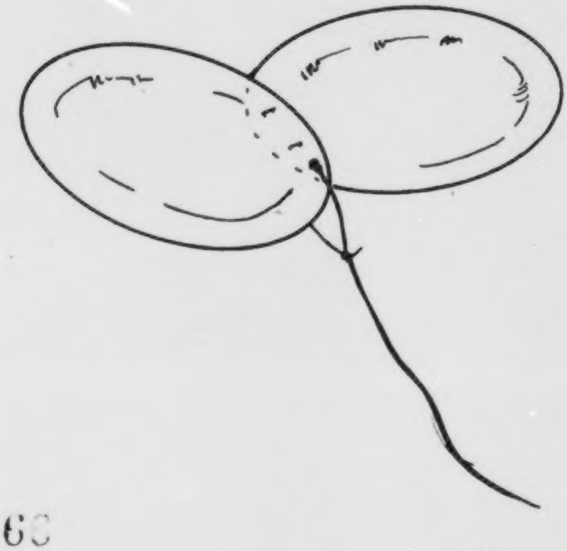
Roll down the top of a paper bag. Punch a hole through each side of the sack at least an inch from the top. Form a bridle by running a length of heavy string through the holes, as shown. Knot on either side. Tie 4 or 5 feet of string to the center of the bridle. If there's an extra sack, cut more holes in the bottom or sides and compare how it flies to how the sack with no extra holes flies.



Paper Plate Glider

Staple together 2 paper plates, overlapping the edges as shown. Attach a pull string where the plates overlap. The glider will twirl in the breeze. The children can experiment with different arrangements to produce different kinds of twirls.

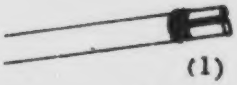
Older school-agers may want to make larger, more comlex kites: cross-bow kites, box kites, butterfly kites, Conyne kites, and fish-tail kites.



The Eddy Bow Kite

Directions:

1. Use a bow-stick and a spine-stick which each measure ¼ inch by 3/8 inch by 42 inches. Cut a notch in the end of each stick and reinforce with string (1).
2. Attach the center of the bow to the spine 8 3/8 inches from the top end of the spine (2).
3. Attach a strong string to one end of the bow. Bend the bow back and tie the string to the other end of the bow (3).
4. Outline the kite with a 6-ply cotton string. Pass the string around the entire frame in the notches of each stick. Tie the ends near the lower spine-end. The left and right sides of the kite frame should be balanced, and the crossing axis at a right angle (4).
5. Cover the kite with tissue paper, crepe paper, or light wrapping paper. Cut the paper 2 inches larger than the outline of the frame. Turn 1 inch of the margin over the frame string and glue to the main body.
6. Attach the bridle and flying line as shown (5).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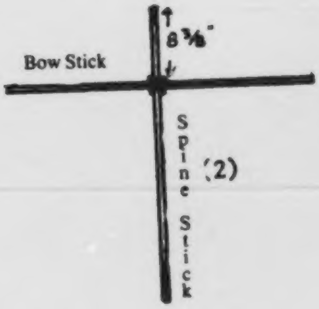

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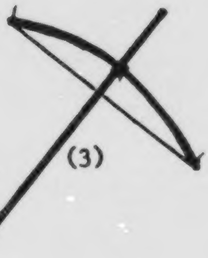
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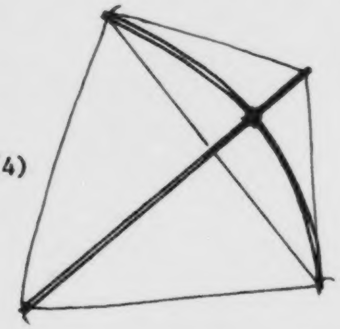

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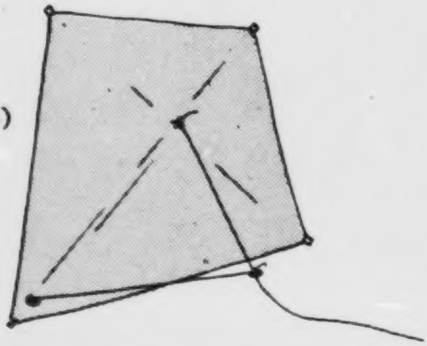
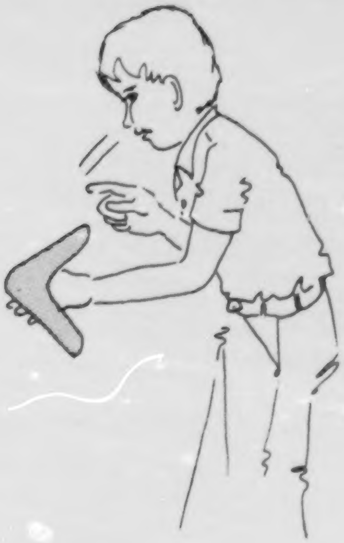


Kite Safety

- Put kites together with string or glue – don't use metal.
- Fly kites where there's no traffic. Don't fly kites on a street, even if there is no traffic.
- Fly kites in open spaces so they won't get hung on something. If a kite hangs on a wire, leave it. It could be a conductor of electricity.
- If younger children are watching, let them see the kites up close and talk about them.

Boomerang



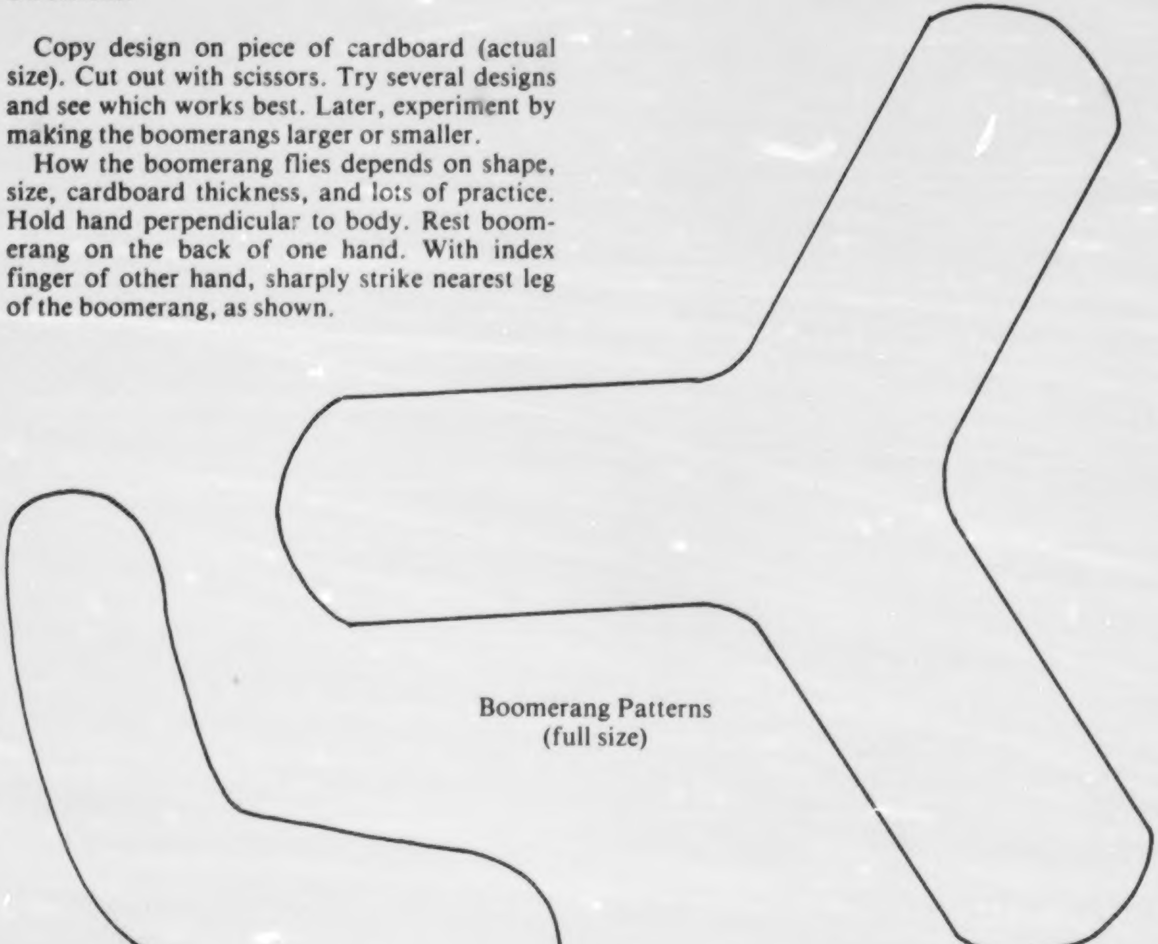
A boomerang spins through the air in an arc and returns to the thrower. Boomerangs have been used in Australia as hunting weapons.

Materials:
- thin cardboard
- pencil

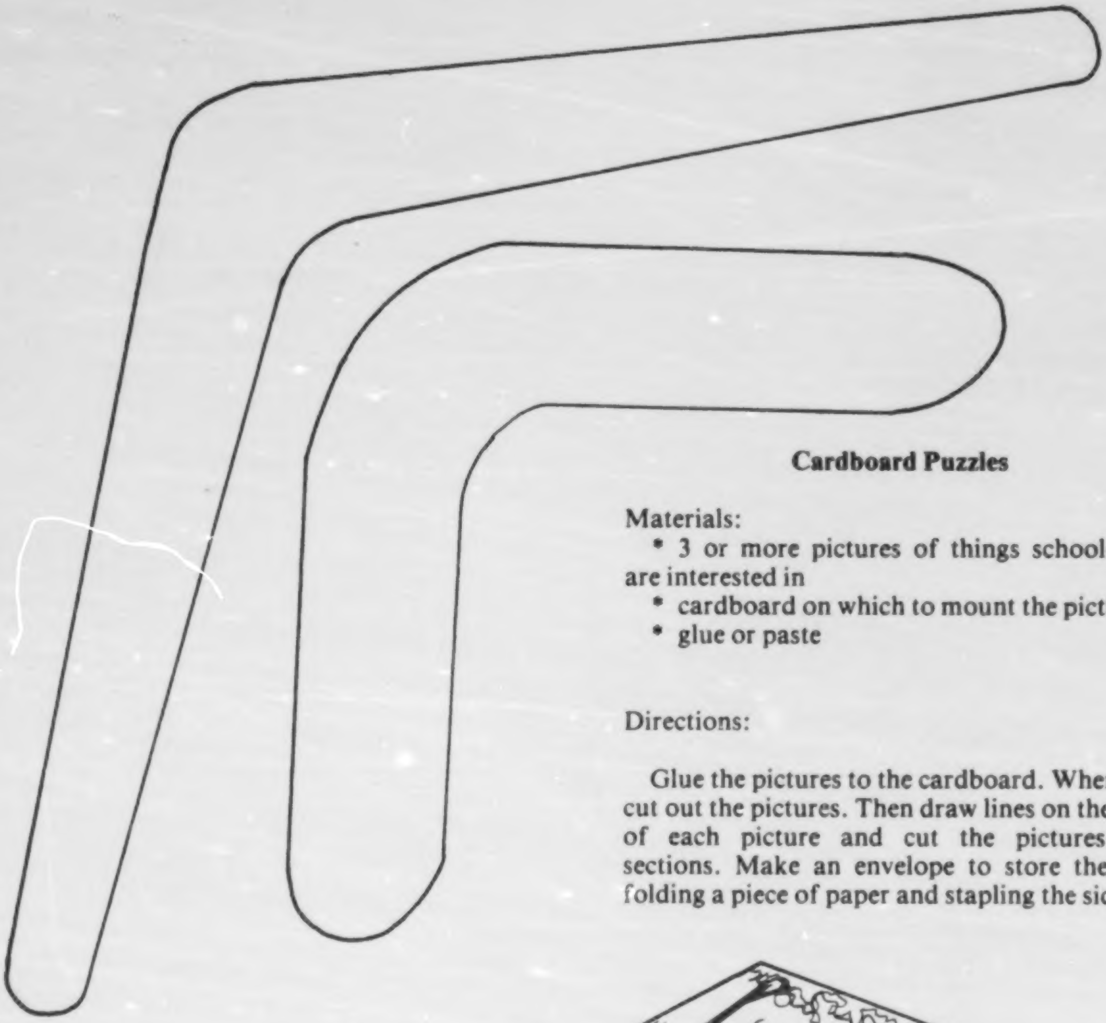
Directions:

Copy design on piece of cardboard (actual size). Cut out with scissors. Try several designs and see which works best. Later, experiment by making the boomerangs larger or smaller.

How the boomerang flies depends on shape, size, cardboard thickness, and lots of practice. Hold hand perpendicular to body. Rest boomerang on the back of one hand. With index finger of other hand, sharply strike nearest leg of the boomerang, as shown.



Boomerang Patterns
(full size)



Cardboard Puzzles

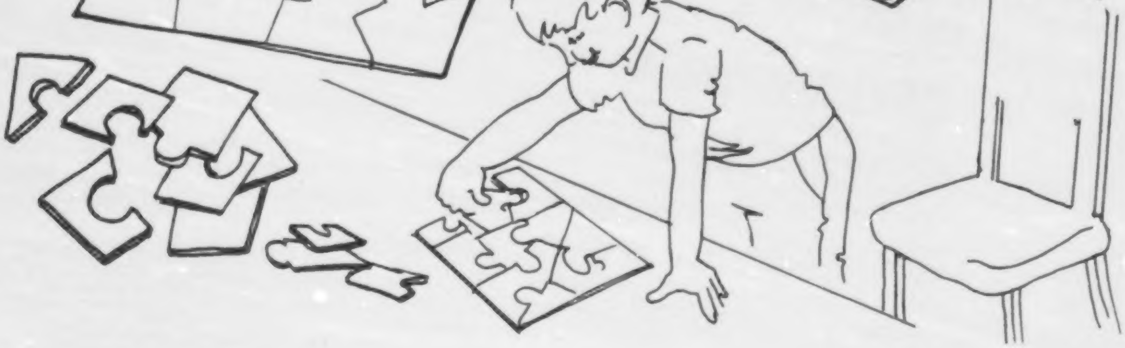
Materials:

- 3 or more pictures of things school-agers are interested in
- cardboard on which to mount the pictures
- glue or paste

Directions:

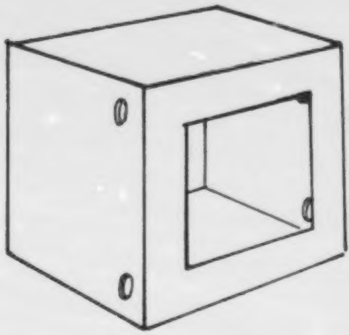
Glue the pictures to the cardboard. When dry, cut out the pictures. Then draw lines on the back of each picture and cut the pictures into sections. Make an envelope to store them by folding a piece of paper and stapling the sides.

Table Toys



Movie Box

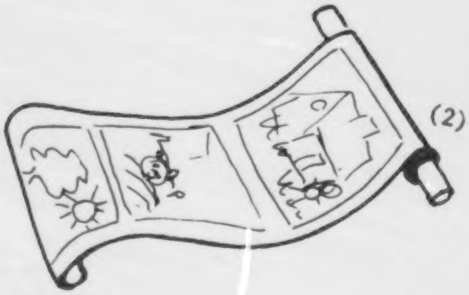
Materials:
- cardboard box
- 2 wooden dowels, 5-6 inches longer than width of box
- sturdy paper 6 to 8 feet long (depends on length of story and number of frames) and 18 inches to 3 feet wide (depends on size of box)



(1)

Directions:

1. Cut a square out of box-front for the screen.
2. Cut evenly spaced holes for dowels to go through - about 2 inches from front of box (1).
3. Pick a story such as *The Three Bears* or *Peter Cottontail*, or encourage the children to make up a story and illustrate it in frames like a film strip.



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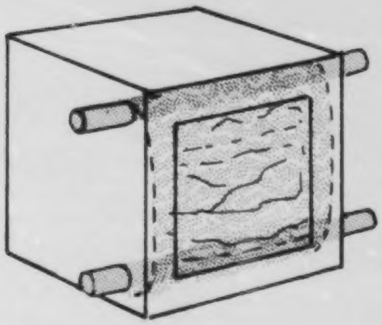
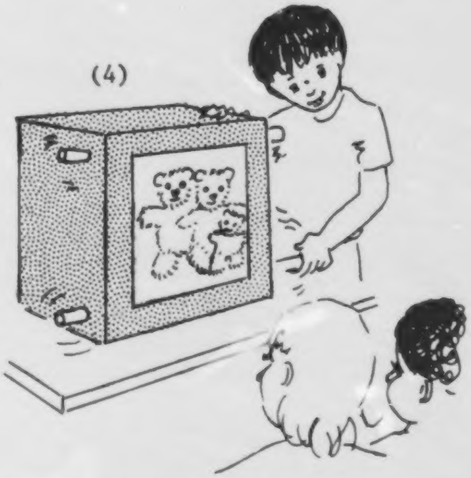


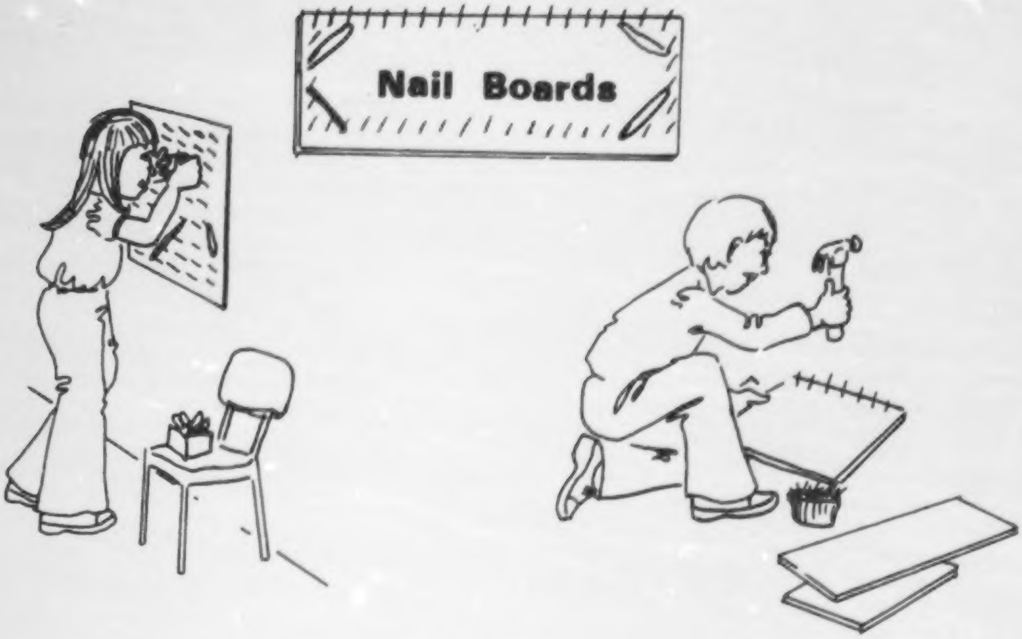
(3)

4. After drawing the pictures, roll illustrated paper onto a dowel, pictures facing outwards (2).
5. Insert dowel into top 2 holes of box (3).
6. Insert second dowel in bottom 2 holes.
7. Pull end of paper down and wrap around bottom dowel.
8. Turn bottom dowel to show illustrations (4). Children may narrate the movie.

(4)

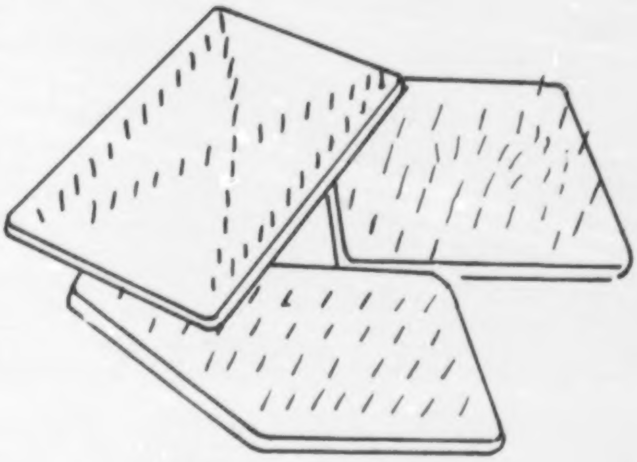


Nail Boards



Materials:

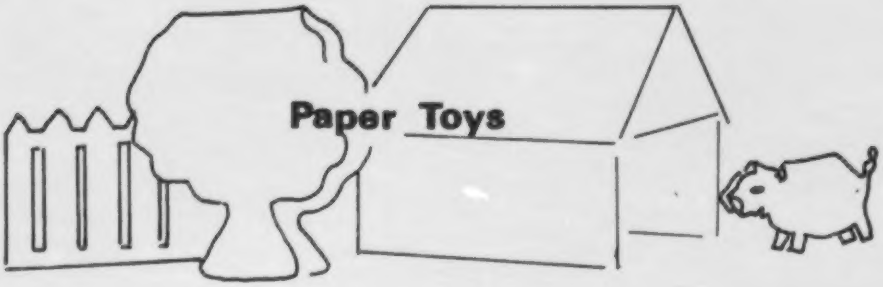
- boards, ¾ to 1 inch thick, in a variety of shapes and sizes (scrap pieces given away by lumber yards)
- finishing nails in 3 or 4 sizes
- sandpaper and varnish or enamel, to smooth and finish wood
- colored yarn



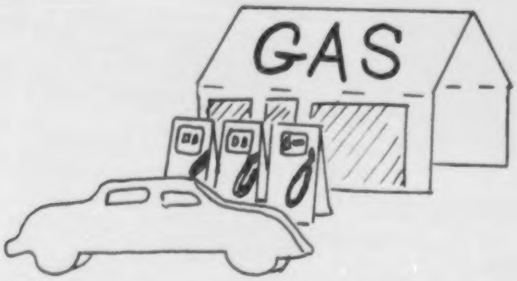
Directions:

1. Sand the board and any sharp edges.
2. If board is painted, allow to dry overnight.
3. Draw design on board in pencil and determine location of nails.
4. Design may be colored with felt markers, ink, or paint, then protected by a coat of varnish. Dry overnight.
5. Pound nails in securely, being careful not to have sharp points sticking out other side.
6. Emphasize design by weaving colored yarn among the nails. Use screw-eyes to hang boards on wall.

Paper Toys



Materials:
- stiff paper
- glue, scotch tape
- crayons or water color pens
- small boxes



Directions:

Make everything with a fold at top. Spread sides apart to make them stand.

House:

1. Fold 4-inch square of paper in half. Open it (1).

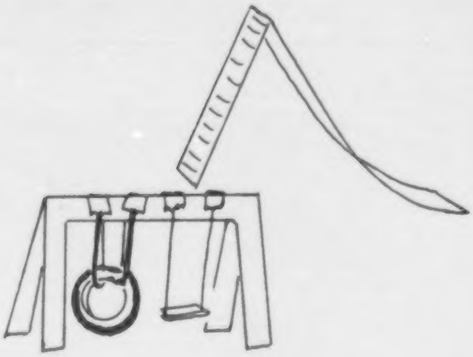
2. Fold top down to center crease. Fold bottom up to center crease (2).

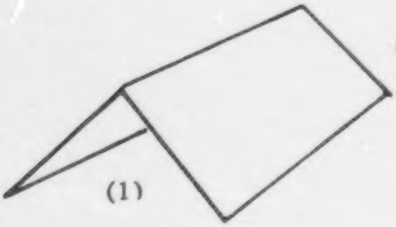
3. For the roof, cut a rectangle 4 inches long and 3 inches wide. Fold in half lengthwise. Set on house.

4. Cut chimney as shown (3).

5. Cut slit in roof and insert chimney (4).

6. Color windows and doors (4).

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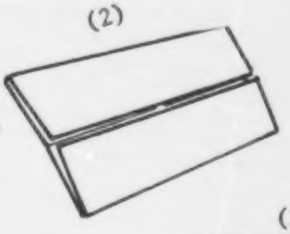

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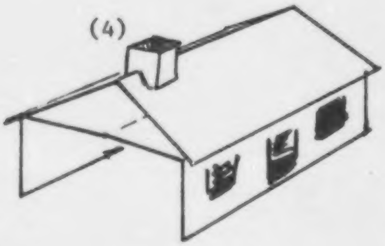

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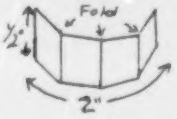
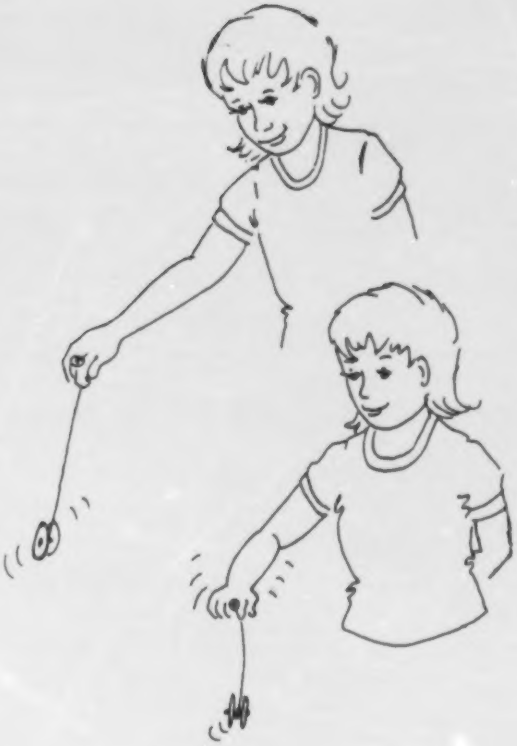


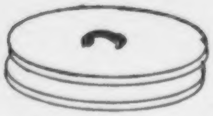
Button Yo-Yo

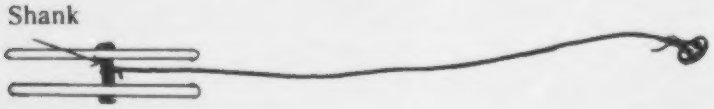


Materials:
- 2 large coat buttons, same size
- 1 smaller button
- heavy thread

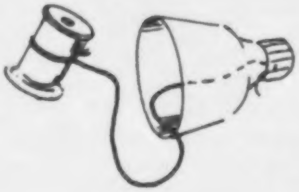
Directions:

Tie the large buttons loosely together, as shown. Tie a 24-inch length of thread around shank between buttons, as shown. Tie other end of string to smaller button. Roll string around shank. Hold small button between index and middle finger, let button slowly unroll. When nearly to bottom pull back to reverse movement.





Catch-It

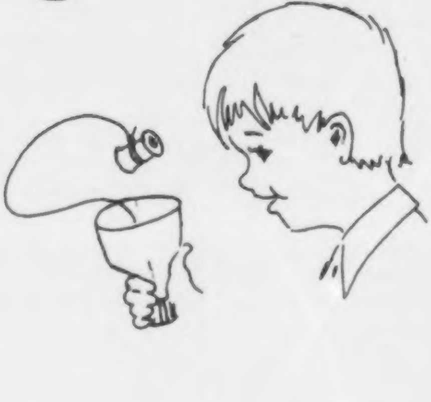


Materials:
- top half of plastic bottle
- spool
- string, 16 to 20 inches long

Directions:

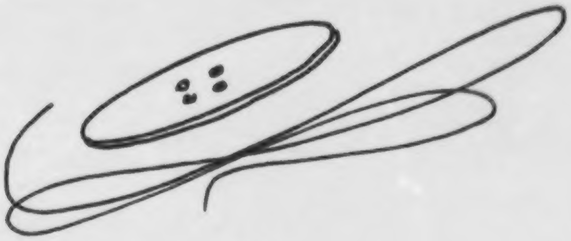
Tie spool to one end of string. Thread other end of string through bottle half, then through bottle neck. Screw on bottle top to secure end of string.

To play, hold bottle-catcher as shown. Let spool hang loose. Swing the spool forward and up, trying to catch the spool in the catcher.



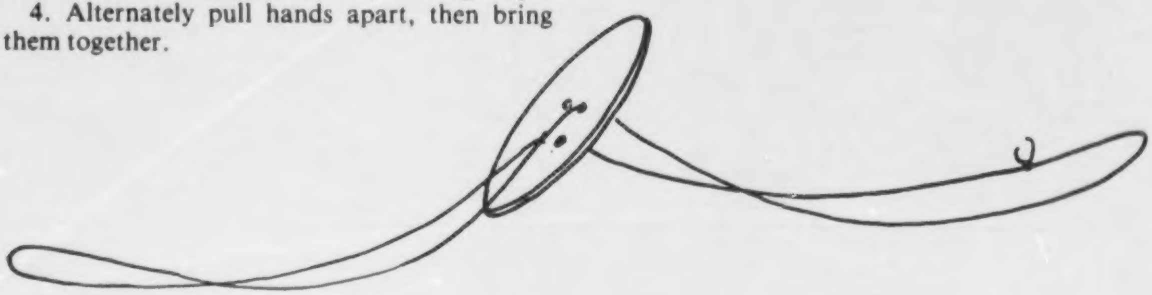
Humdinger

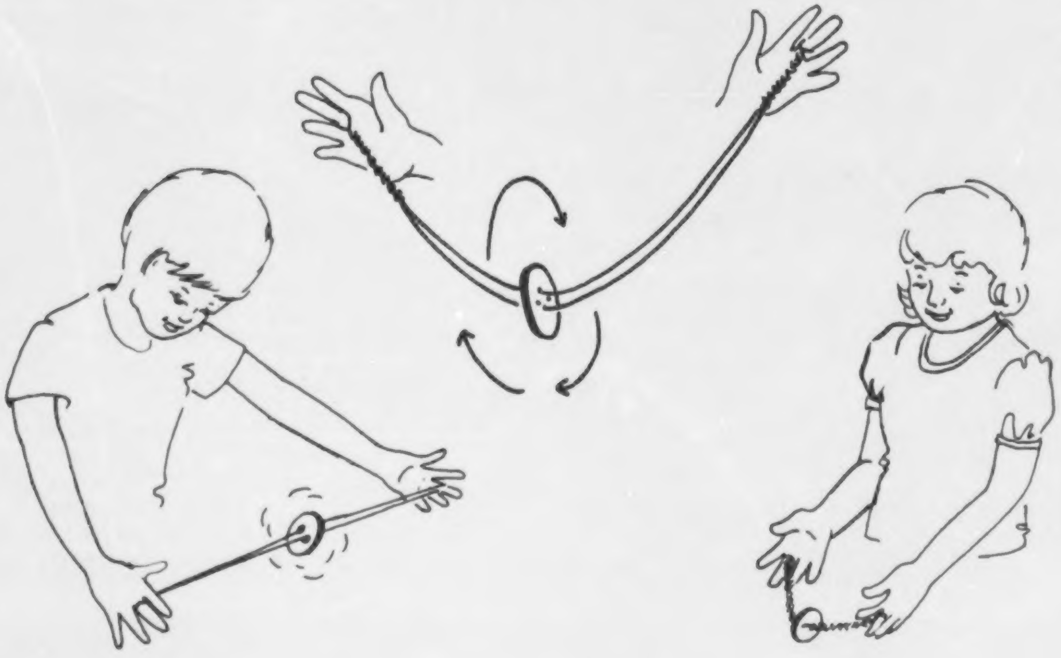
Materials:
- big button
- string, 24 inches long



Directions:

1. Run string through button, as shown.
2. Tie a knot in the string.
3. Hold the string and twirl it, winding it up.
4. Alternately pull hands apart, then bring them together.



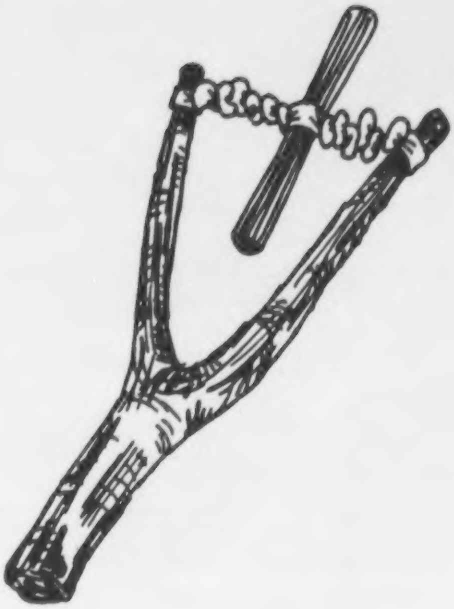


Jumper

Materials:

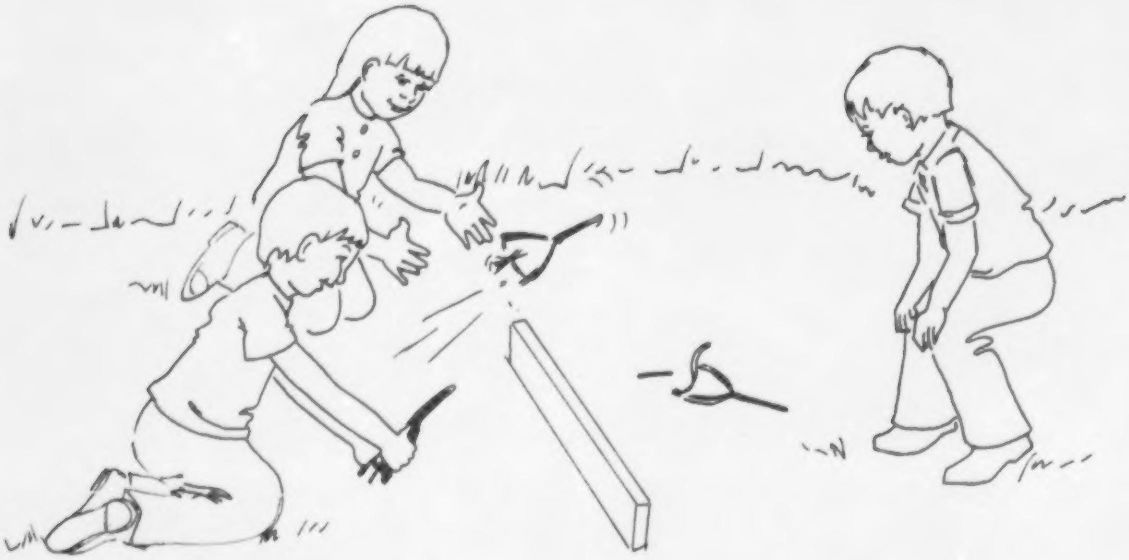
- very thin "Y" shaped twig or dried wishbone from turkey
- straight twig
- thin rubber band

Caution: Keep jumper away from eyes.

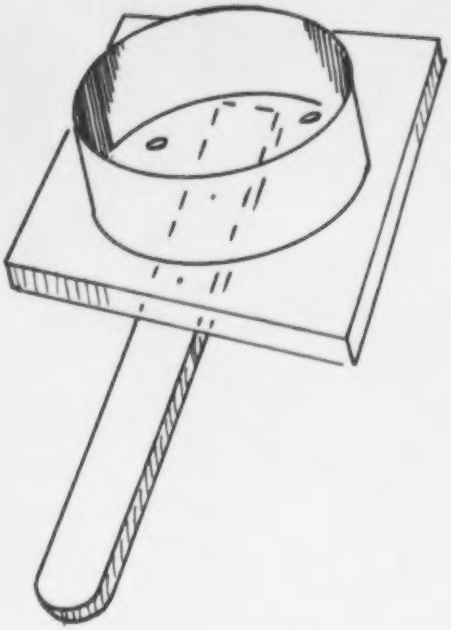


Directions:

1. Stretch the rubber band across tops of the "Y" twig and put a small twig through middle of the rubber band. Twig should be short enough not to touch the handle of the "Y" twig.
2. Wind the twig to the left, 10 to 15 times.
3. Hold jumper down on flat surface, then move hand quickly away. The small twig will spin and cause the jumper to shoot into the air.



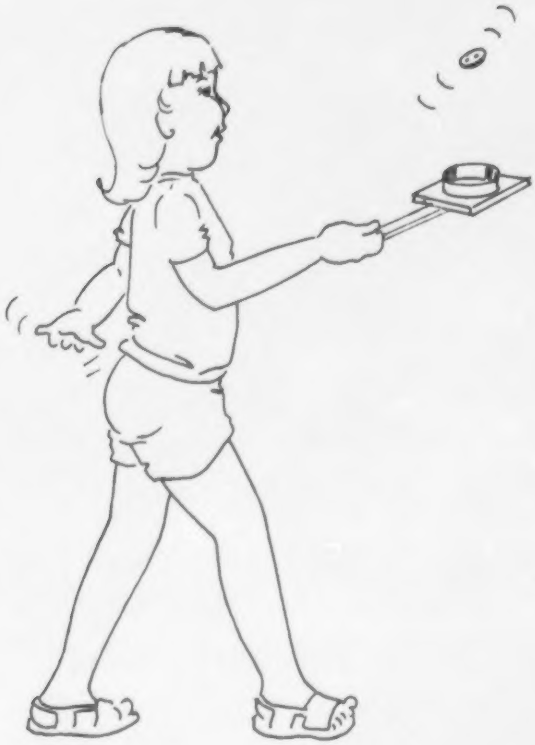
Paddle Toss



Materials:
- small tin can (e.g. tuna can)
- small square of plywood, slightly larger than can
- strip of wood - a paint stirrer for instance
- button

Directions:

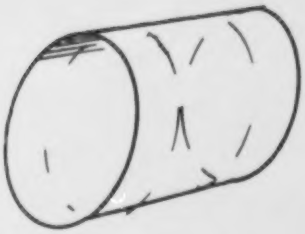
1. Nail can onto plywood.
2. Nail plywood onto strip of wood.
3. Put a big button in the can.
4. Toss button into the air and try to catch it.

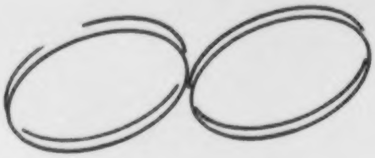


C-16

Roll-Back Can

Materials:
- coffee can (1 or 2 pounds) with 2 snap-on plastic lids
- medium size rubber bands
- heavy weights (nuts, bolts, or rocks)
- large nail
- can opener
- stubby pencil or twig

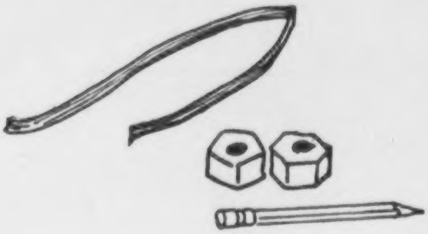


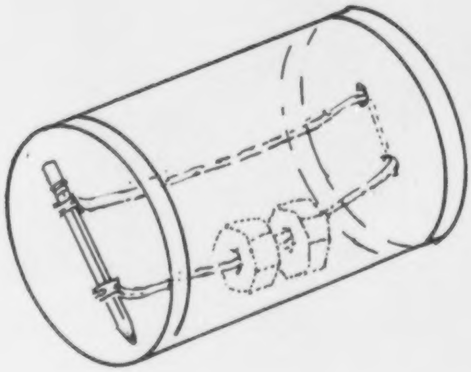


Directions:

1. Remove top and bottom from can.
2. With large nail, punch 2 holes in each plastic lid - equally distant from center of lid and one inch apart.
3. Join rubber bands with larks-head knots (see macrame section) so their total length is twice the length of the can. Experiment to find the right size of rubber band.
4. Thread rubber bands through holes in one lid so that the two ends are on inside of can. Put weights on one strand, then pull strands out the holes of the other lid. Pull rubber band over pencil as illustrated. Snap lid on can.
5. Push the roll-back can across the floor. It'll come back.

How it works: The can rolls and the rubber bands tend to turn with it. But the weighted section of rubber band doesn't turn. So the bands wind up to the weighted section and build energy to unwind. When the forward roll stops, this tension forces the can to roll the opposite direction of the way it's been rolling.





Weaving Spool

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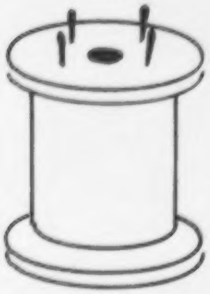
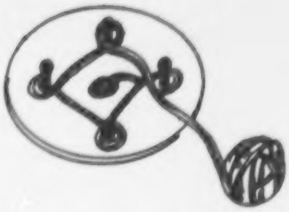


Materials:
- large wooden spool
- nails without heads (finishing nails)
- thin cord or string

Directions:

Hammer 4 nails so they're evenly spaced around the hole on one end of the spool. The nails should extend about ¼ to ½ inch above top of the spool (1).

(2)

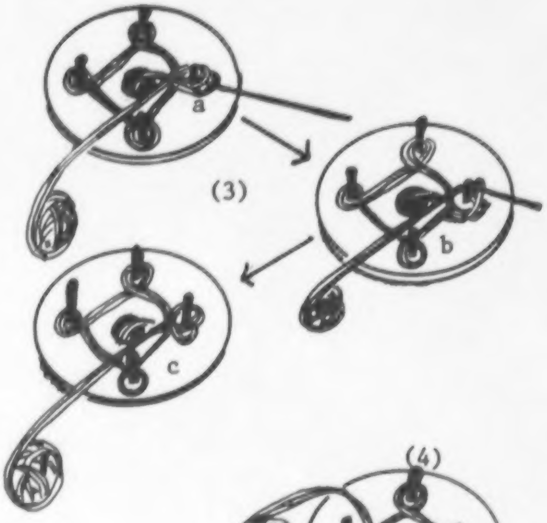


To Use:

1. Drop the cord down through the hole in center of spool.
2. Wind yarn around each nail (2).
3. Begin winding again on top of the first yarn loop (3a).
4. Using a toothpick, lift the bottom loop up and over the second loop and nail (3b and 3c).
5. Continue winding yarn and lifting bottom loop up and over (4).
6. The woven yarn will come out the bottom of the spool in a tubular shape. While working, pull gently on it.
7. When it's the right length, finish the ends by threading yarn through each loop on posts, drawing yarn tight. Tie knot to secure yarn.

Use to make ranch ropes, belts, bands, etc.

(3)



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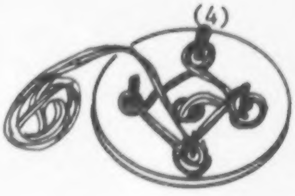
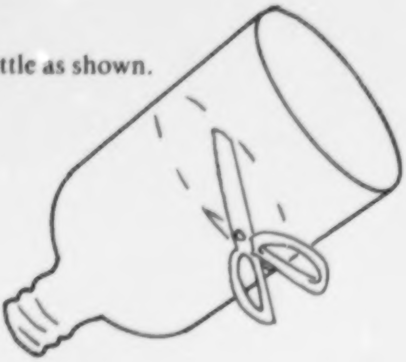


Weaving Bottle*

Materials:
- clean, dry detergent bottle

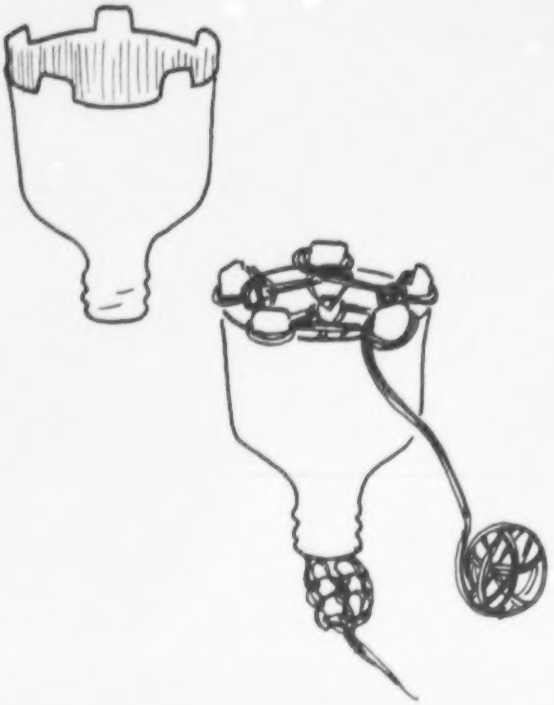
Directions:

1. Cut bottle as shown.



2. Cut evenly spaced, square posts around edge of plastic bottle, as illustrated. Make at least 4 posts. More posts will make for a tighter weaving.

The plastic bottle loom works the same as the spool, but makes a larger tubular shape.



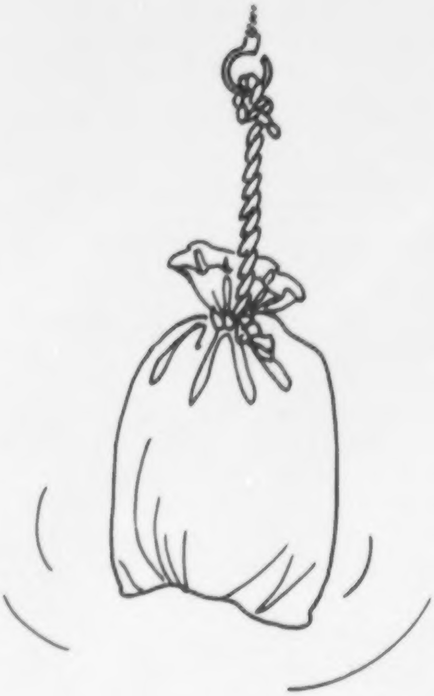
Large Action-Toys

Punching Bag

Materials:
- empty flour or feed sack, or large paper bag
- 6 feet of strong cord
- short string
- newspaper

Directions:

1. Tightly stuff bag with wadded balls of newspaper. Make bag about 18 to 24 inches long.
2. Gather top of bag and tie tightly with short string.



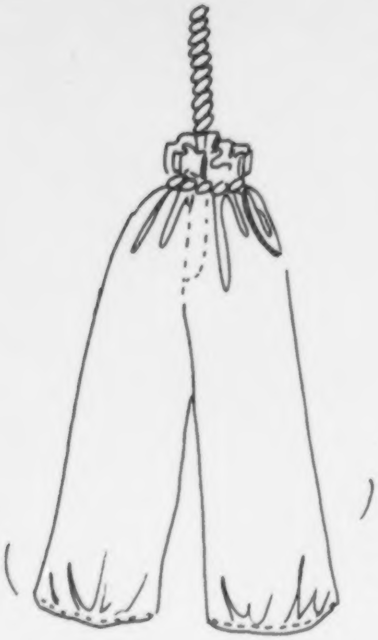
3. Suspend at desired height from a beam, rafter, or door frame. A big screw eye is good for hanging. Outside, suspend from a swing stand or tree limb.

Good for exercising and developing arm muscles.

*Taken from *Play Book* by Steven Caney.

Variation:

1. Tightly stuff an old pair of jeans with bottoms of legs sewn shut.
2. Tie together with rope at top. If rope slips, run through belt loops or under crotch.

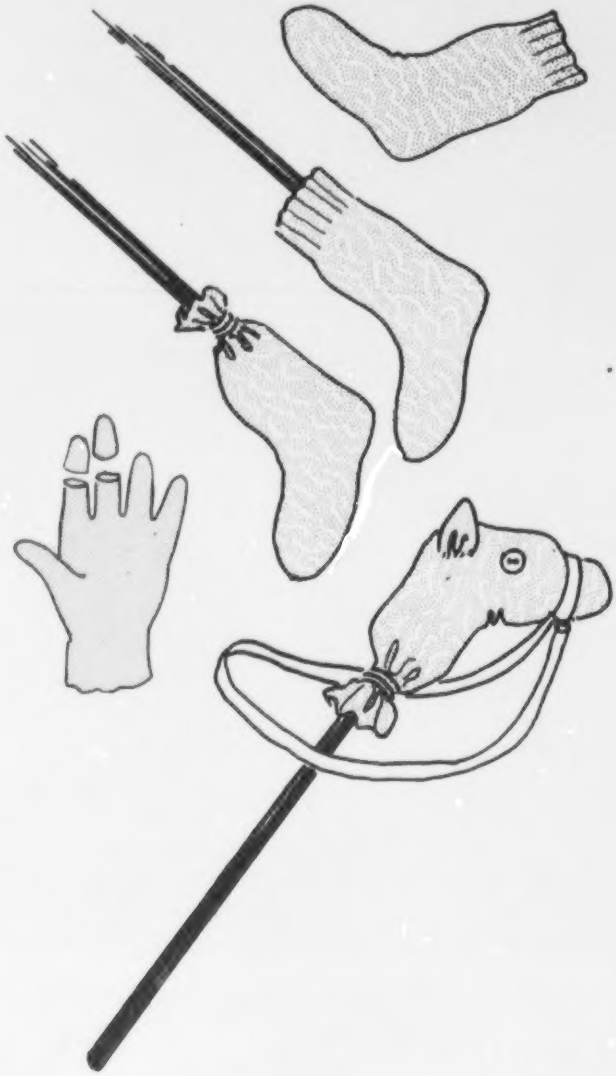


Stick Horse

Materials:
- broom stick
- an old sock
- stuffing (rags, cotton, sawdust, hose)
- tacks
- string
- an old glove
- 3 buttons
- a ribbon or strip of cloth for reins

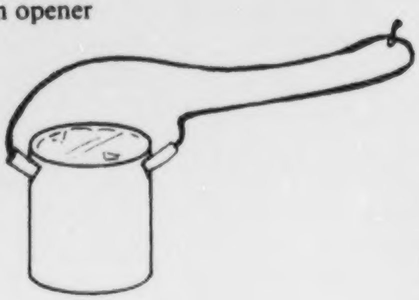
Directions:

1. Stuff an old sock with whatever is available. Make sure it's full and firm.
2. Push the end of the broomstick through to the heel of the sock.
3. Tack the stuffed sock to the stick. Wrap string around the end of the sock, covering the tacks.
4. Cut 2 fingers off an old glove. Stuff and use them for ears. Sew them onto the heel of the sock.
5. The eyes are 2 big buttons. Sew them halfway down the foot of the sock.
6. Sew the ribbon or cloth around the "nose" and use as reins. Cut it about 3 feet long.



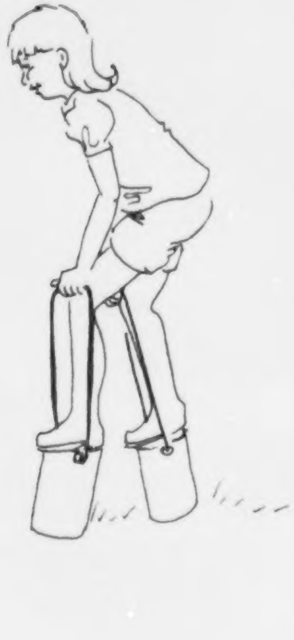
Tin Can Stilts

Materials:
- 2 large juice cans the same size with tops and bottoms attached
- 2 pieces rubber tubing 10 inches long
- 2 pieces strong cord (length depends on height of child)
- can opener



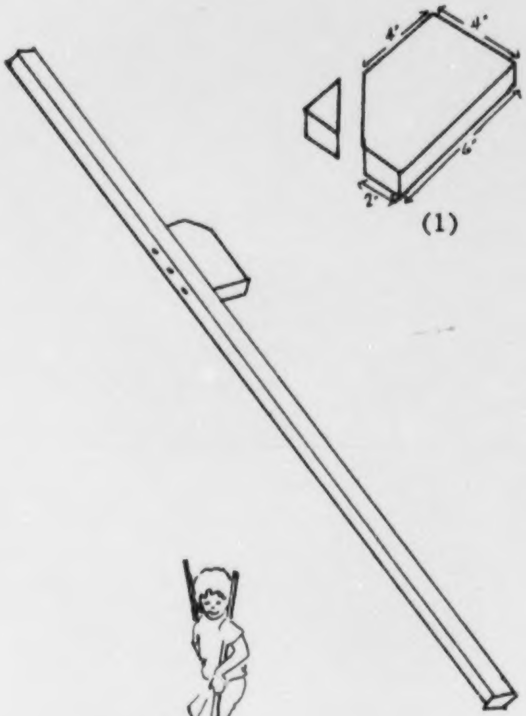
Directions:

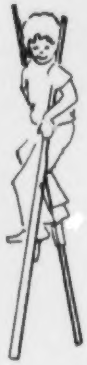
1. Use can opener to make 2 holes on opposite sides of each can, close to the top rim. Drain.
2. Measure and cut 2 cords to form knee-high loop, as shown. Thread 1 piece of cord through a piece of tubing to keep the sharp can from cutting the cord. Then thread the cord through holes in sides of can. Knot cord. Do the same with the other cord. Child holds each loop at knee level.



Wooden Stilts

Materials:
- 2 pieces of 1-inch by 2-inch lumber cut in lengths of 5 to 7 feet
- 2 pieces of lumber for foot blocks, 2 inches by 4 inches by 6 inches
- glue
- hammer and nails
- sandpaper





Directions:

1. Saw upright supports desired length. Measure and saw corner off of both footblocks as shown in figure 1.
2. Measure and glue the long side of each footblock to upright supports, as shown (2). Be sure footblocks are attached at the same height on both stilts.
3. Hammer nails through the support and into footblock. Sand all corners and rough edges, paint if desired.

Science-Oriented Toys

Balance Toy

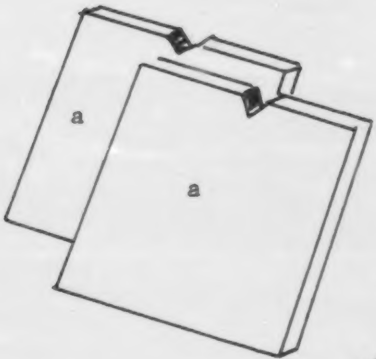
With this toy, a school-ager can learn basic scientific principles.

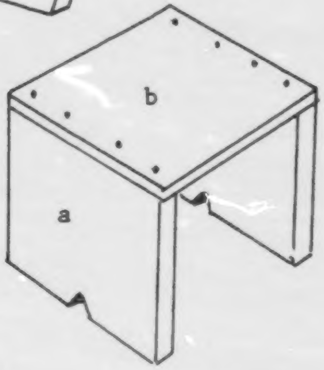
Materials:

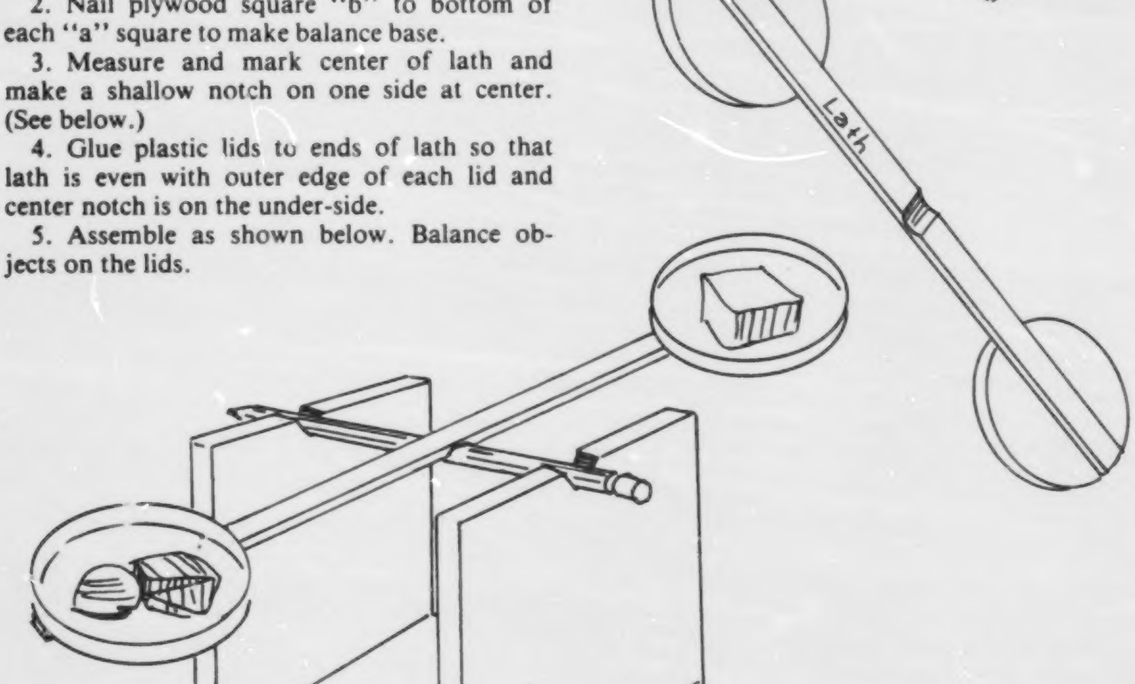
- 2 squares of scrap lumber 1 inch by 3 inches by 3 inches (a)
- 1 square of ¾-inch plywood 3 inches by 3 inches (b)
- 2 identical plastic lids
- 1 strip of wood lath 6 to 9 inches long
- 1 long pencil or wooden dowel
- glue and nails

Directions:

1. Cut a notch on top side of each square "a."
2. Nail plywood square "b" to bottom of each "a" square to make balance base.
3. Measure and mark center of lath and make a shallow notch on one side at center. (See below.)
4. Glue plastic lids to ends of lath so that lath is even with outer edge of each lid and center notch is on the under-side.
5. Assemble as shown below. Balance objects on the lids.



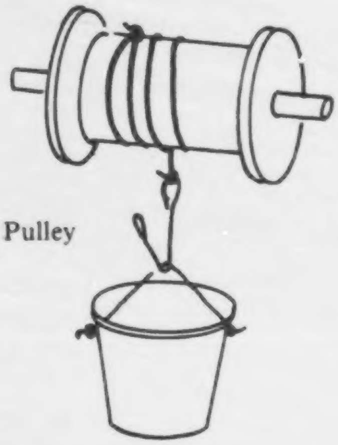




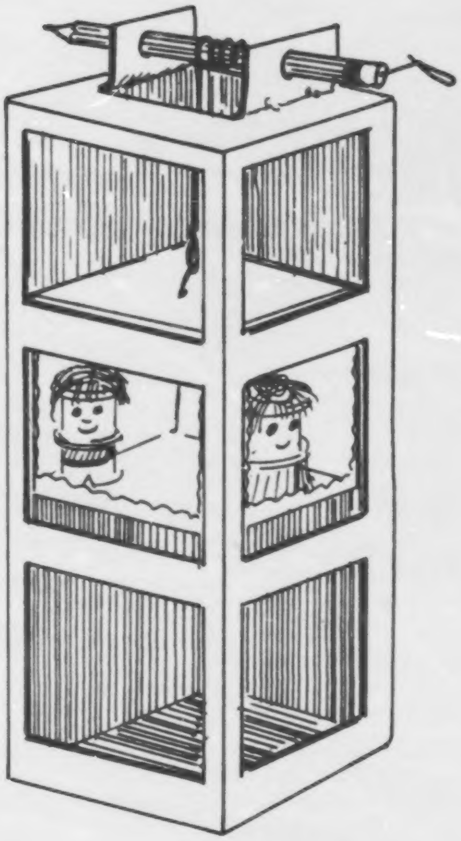
Pulleys

Use a spool or pencil to wind up the cord as it's turned. A paper clip or hairpin can be inserted into the eraser to serve as a handle. If a wooden spool is used, hammer in a small nail for a handle.

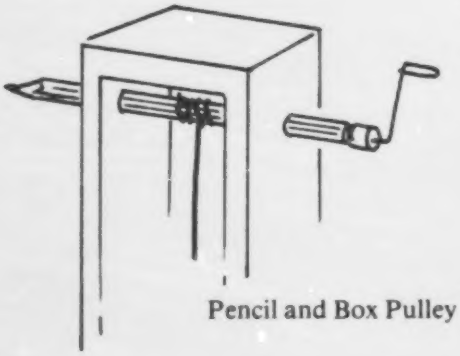
Children like to make villages, forts, and bridges out of milk cartons, other cardboard boxes, or plain cardboard. A pulley is fun and useful for making elevators, cranes, and drawbridges.



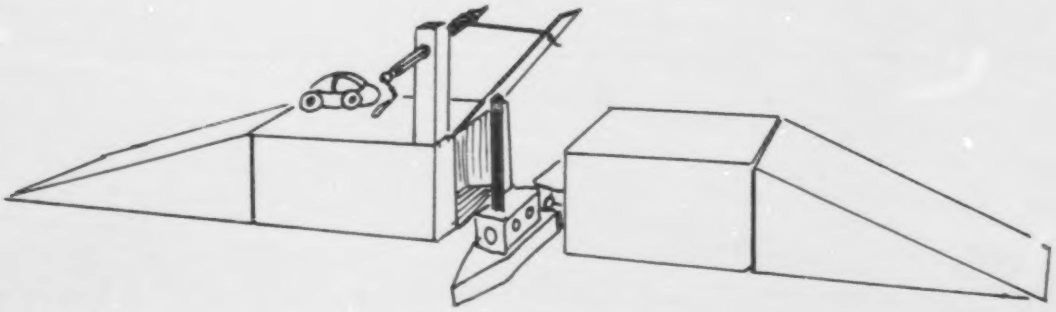
Spool Pulley



Pencil and Box Pulley #2



Pencil and Box Pulley #1



Inclined Plane

Often a ramp is useful for moving objects from a lower level to a higher level. For example, children like to make ramps for highways for toy cars.

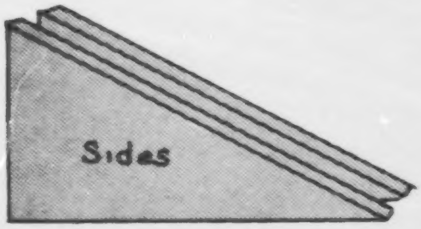
Cardboard

Choose a cardboard box with a solid bottom and the right width and length for the ramp. Measure and cut box as shown. Bottom of box becomes top of inclined plane.

To make end "A" vertical, cut along a vertical line from (1) to (2) on each side. Tuck flaps inside "C." Tape and trim so that inclined plane sits evenly.

Wood

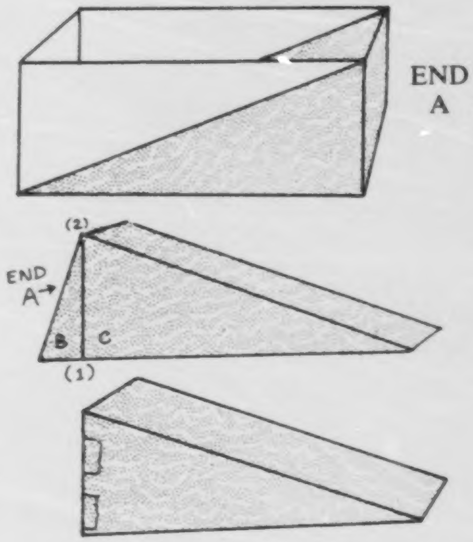
Materials:
- 2 identical triangles of lumber with 1-inch thickness
- 3 rectangles of ¼-inch plywood
- glue, nails, and sandpaper

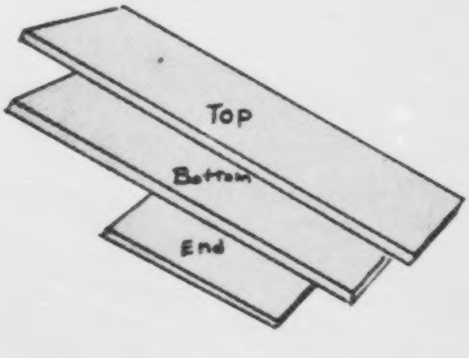


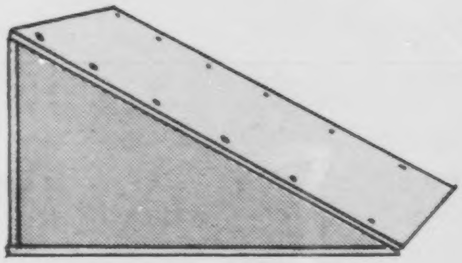
Directions:

For a sturdier inclined plane, decide on size needed and cut 2 identical triangles of lumber (1). Determine width of inclined plane and cut ¼-inch plywood to fit sides of triangle (2).

Assemble with glue and small finishing nails (3). Sand rough edges. Varnish or paint if desired.







3. Props and Prop Boxes For Dramatic Play

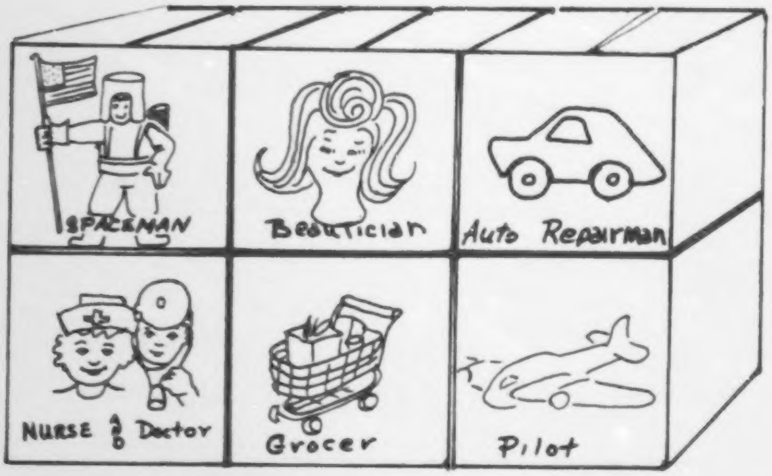
Dramatic play is the spontaneous acting out of a fantasized situation or identiy. It's enjoyable, stimulates the imagination, helps to understand others, and teaches language skills, cooperation, and interaction.

It's free of teacher control, but the teacher may be encouraging by providing props in convenient, labeled boxes.

Prop boxes may come from repair shops, garage sales, stores with out-of-date items, hardware and surplus stores, dumps, Goodwill outlets, junk yards, attics, basements, and from interested people. Frequently the children and their families contribute a lot and can interest others in helping, too.

Labels for Prop Boxes

- Bus Driver
- Secretary
- Scientist
- Electrician
- Plumber
- Fire Department Workers
- Grocer
- Astronaut
- Shoe Salesperson
- Police
- Post Office Employee
- Painter
- Actor and Actress
- Doctor
- Nurse
- Veterinarian
- Restauranteer
- Beautician and Barber
- Train Engineer
- Sailors
- Baker
- Forest Ranger and Campers
- Auto Mechanic
- Window Washer
- Circus Performers

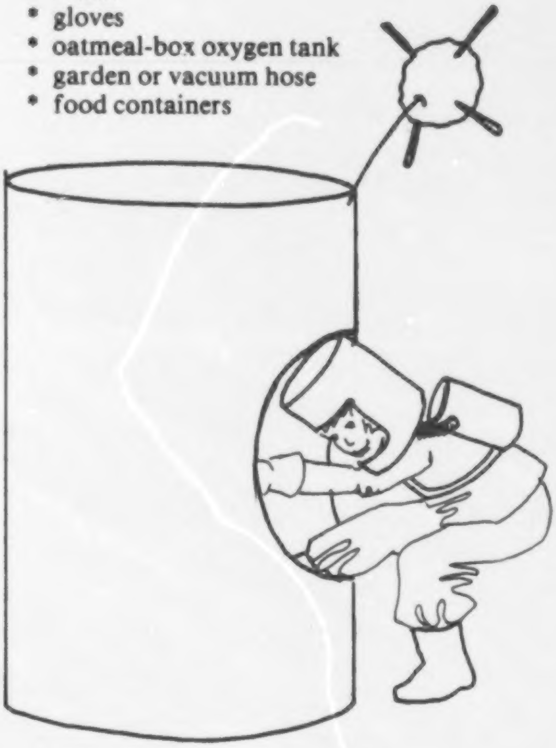


Storage of Prop Boxes

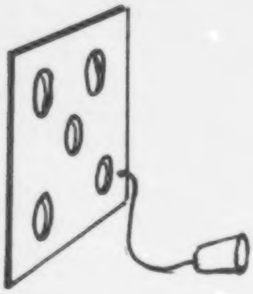
Choose heavy, durable boxes, large enough to store easily. Label and keep them handy on shelf where children can use them easily.

Props To Be Stored

Astronaut
- boots
- gloves
- oatmeal-box oxygen tank
- garden or vacuum hose
- food containers



- flag
- camera
- earmuff headphones
- ice-cream-carton helmet



Instrument Panel

- jar lids pushed into holes in cardboard
- cups on string for oxygen mask or microphone

Nurse and Doctor
- medicine bottles
- uniform or apron
- hat
- bandages
- syringes
- cotton balls
- stethoscope
- tongue depressers

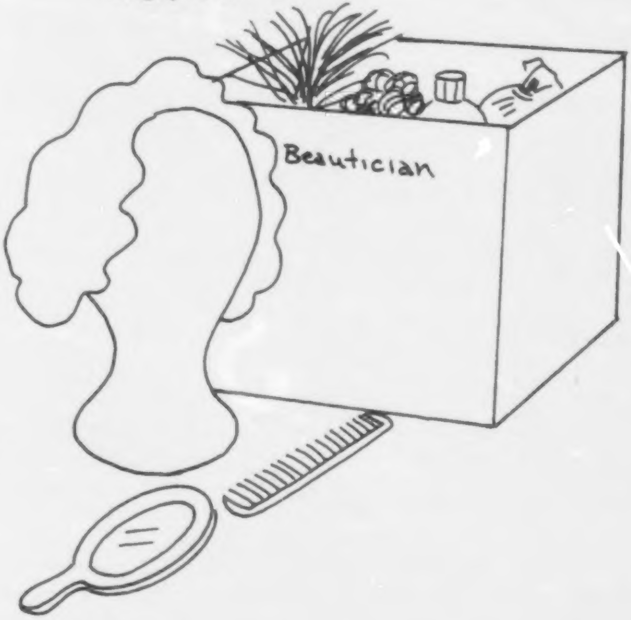
Grocery Store Worker
- cash register
- play money
- paper sacks
- empty food cartons
- plastic food
- cans with smooth edges
- food scale

Restaurant Employee
- pots, pans, and spoons
- salt and pepper shakers
- table cloths
- aprons
- note pads and pencils
- pitchers
- menus
- cash register, play money
- play dishes
- trays

Post Office Employee
- index card file
- stamp pads and stampers
- Christmas stamps
- old envelopes
- cardboard box with scissors
- packages wrapped with string
- mail bag
- old mailbox

Plumber
- wrench
- pipes
- tool box
- hose and nozzle
- old shirt and cap
- spigots
- plungers

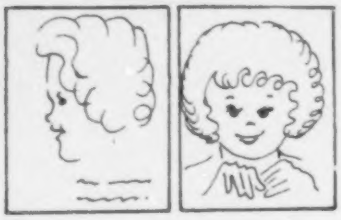
Police
- hat
- badge
- whistle
- traffic signs
- pad and pencil for tickets
- plastic raincoat
- megaphone



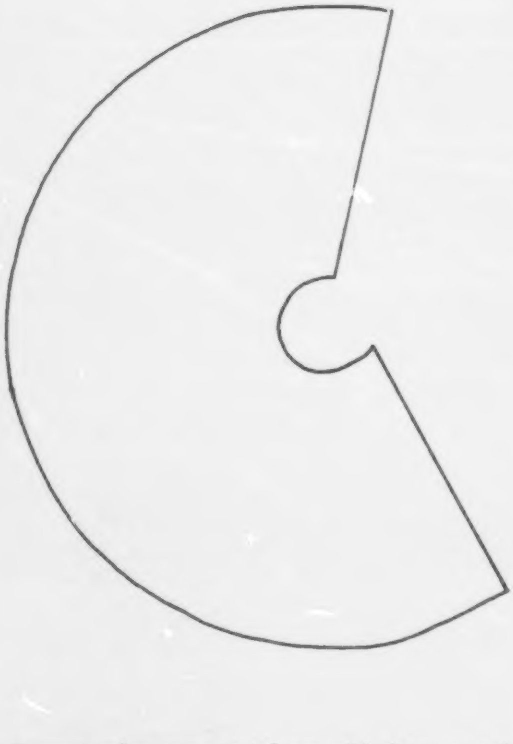
Beautician

- mirror
- comb
- hair pins and rollers
- hair dryer
- apron, smock, or cape
- empty bottles of spray and rinse

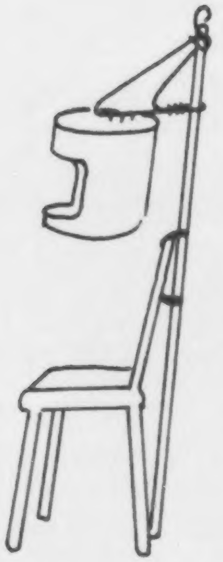
- plastic basin
- wigs and wig forms
- ribbons, barrettes
- towel
- cotton balls
- colored water in nail polish bottles
- pad and pencil
- telephone
- play money
- calendar



- hairstyle pictures cut from magazine



- protective cape cut from old sheet or table cloth



- Hair Dryer
  Tie broom handle to chair back. Bend wire hanger around handle. Hang 2-gallon ice cream carton in place. Remove broom handle for storage.

Yarn Wig

Materials:

- yarn
- scissors
- ruler
- for a short wig, 1 skein yarn cut into 2-foot strands
- for a wig of medium length, 2 skeins cut in 3-foot strands
- for a long wig for braiding, 3 skeins cut in 4-foot lengths

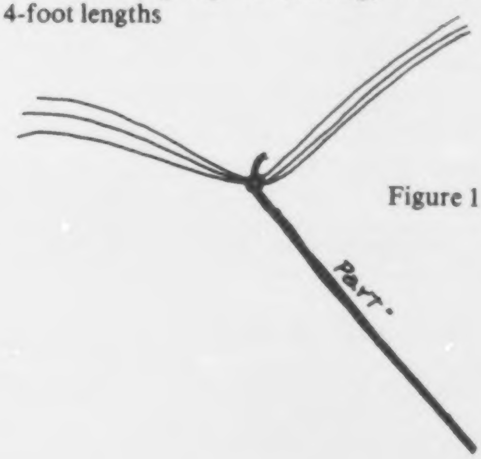


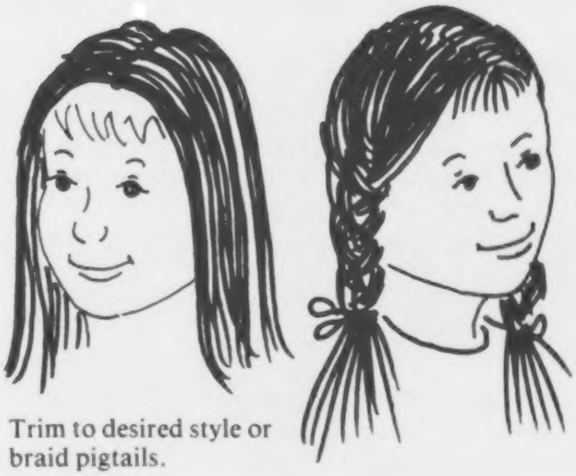
Figure 1

Directions:

1. Tie single strand to middle of set of 3 strands. (Figure 1)
2. Tie a bunch of 3 strands at the middle to the single strand and slide knot down to first bunch. (Figure 2)
3. Repeat until all the yarn is used.

The single strand down center is the "part" and fits at the middle of the head. (Figures 3 and 4)

Figure 4



Trim to desired style or braid pigtails.

Figure 2

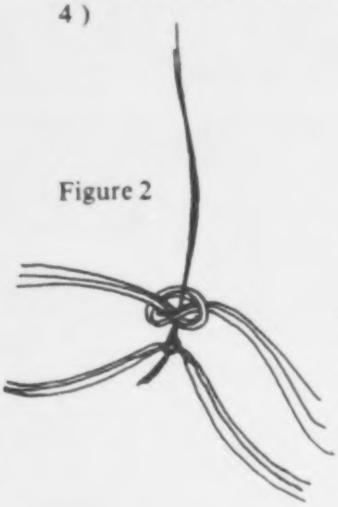
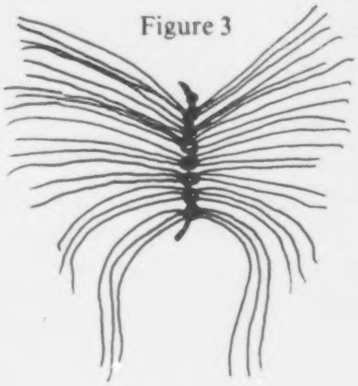
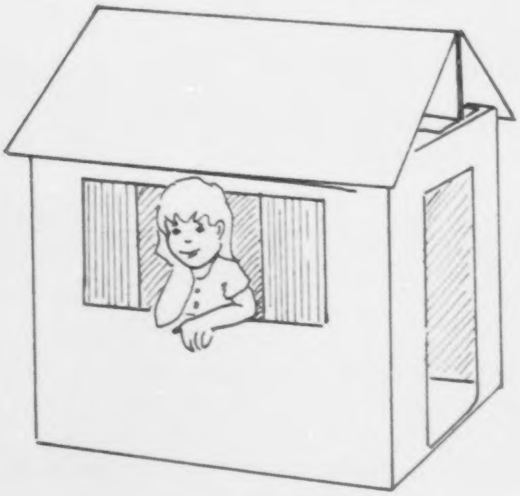


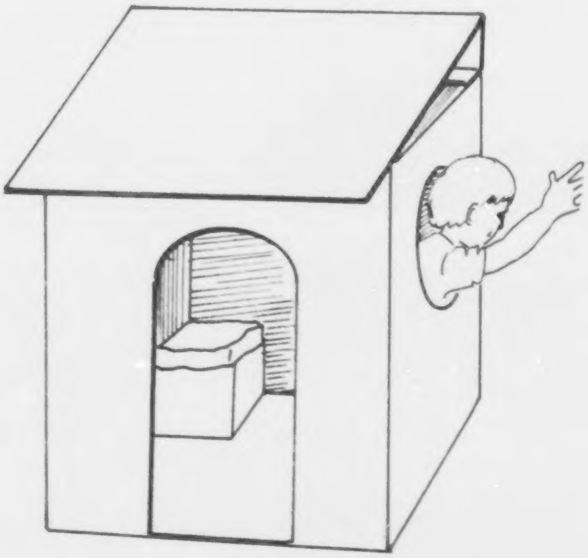
Figure 3



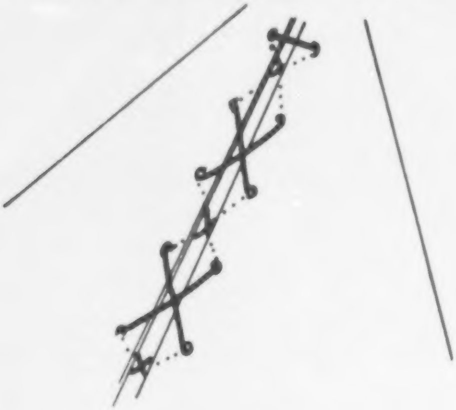
4. Other Props

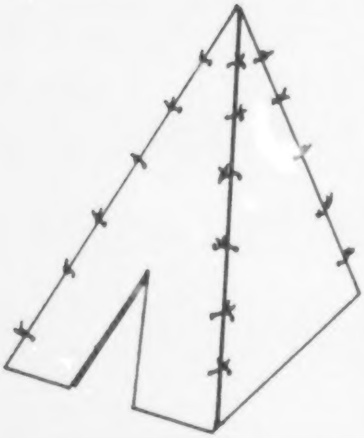
Large Playhouses Made From Cardboard





Use large cardboard boxes that have contained washing machines, refrigerators, or pianos. Most appliance stores will give them away. Cut out doors and windows. Make a roof. Make it as fancy as the children want.





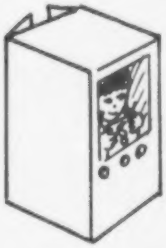
For a tent, cut 4 identical triangles, punch holes, and tie or lace sides together.

For a straight cut, use a razor knife against a yardstick.

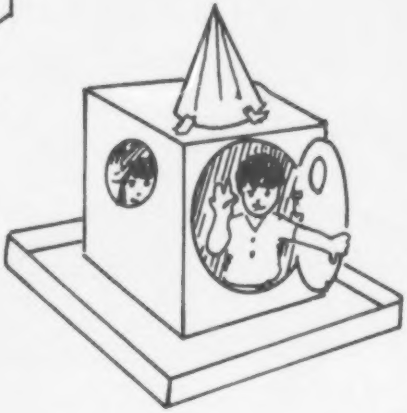
Be sure to have a piece of cardboard underneath what's being cut so as not to damage the table or floor.

Cardboard Toys and Accessories

Cardboard boxes of all sizes and shapes, paper towel rollers, bits of string, spools, and many other items can be used to make simple, effective equipment. Encourage children to use such materials and their imagination.

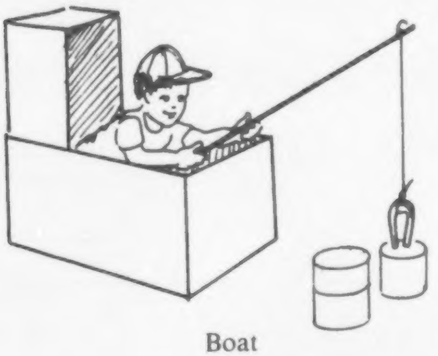


Television



Space Ship

The cone is made of rolled newspapers taped to the cabin top. Heavy string hinges the door latch.

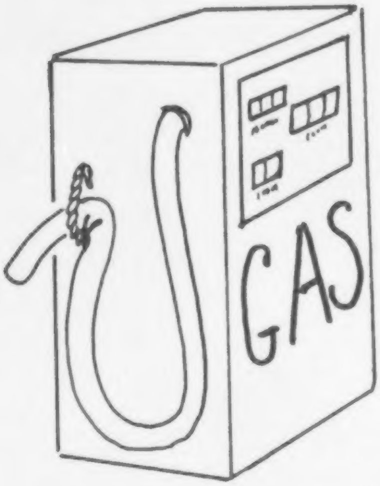


Boat

Gas Station

Draw a meter on the front of the box.

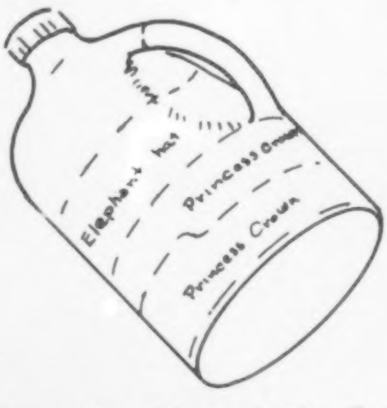
On one side, cut a hole large enough to force in the end of a 4- to 6-foot length of flexible garden hose. Inside the box, punch a hole through both sides of the hose, near the end. Insert a stick to keep the end of hose from slipping back through the hole.



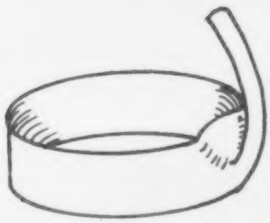
Punch a smaller hole in box side and make a loop of cloth or plastic to hold the end of the hose up. Knot the cloth inside the box to keep it from pulling out of the box.

Bleach Bottle Head Gear

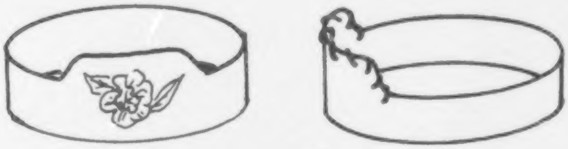
Most children like hats. Try making a variety of them from gallon-size plastic bottles. (Make sure they're totally drained and rinsed clean.)



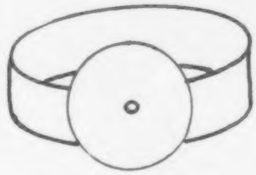
Use white, blue, and aqua bottles. Cut with a sharp knife. Shape with tin snips or sturdy scissors. Punch holes with a heated ice pick and decorate with felt pens or nail polish. Attach bows, rosettes, bells, or artificial flowers. Lace with ribbons or yarn.



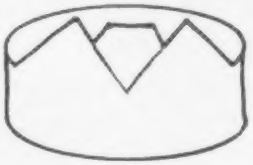
Elephant Hat



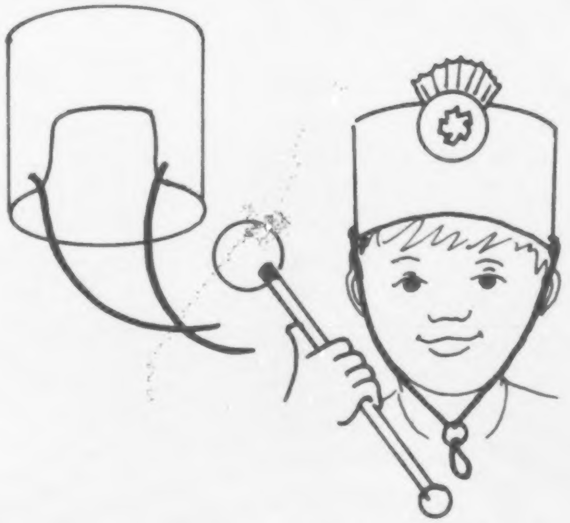
Princess Crown



For a Doctor



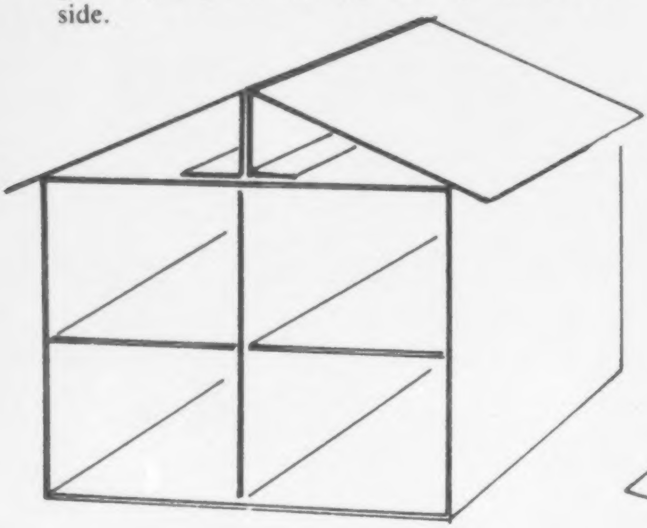
For a Nurse



1½-gallon plastic bottles also make helmets and drum-major hats.

Dollhouse Made From Cardboard Box

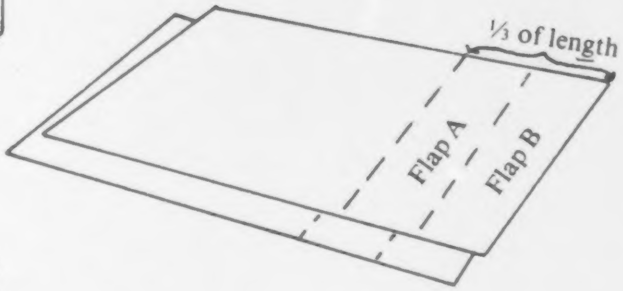
Ask a grocer or liquor store manager for a large cardboard box with dividers (used to pack glass bottles). Remove top and lay box on its side.

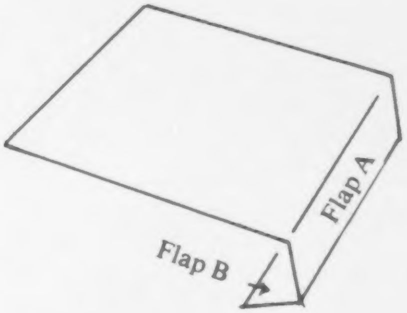


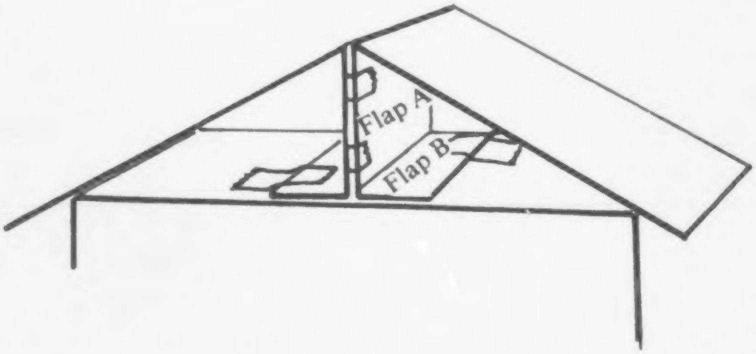
To make roof, cut 2 pieces of cardboard the same size as the top of the box. Measure and mark roof pieces one third of length, then measure and mark center of the marked third, as shown. Fold along marks forming flaps.

Tape flaps "A" together at ends to hold up peak of roof.

Tape flaps "B" to top of house box, at center. Eaves of roof should extend over walls of house.



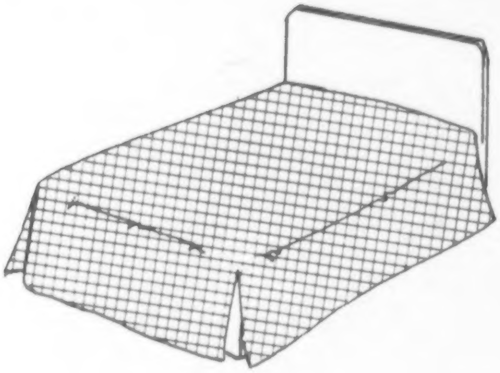




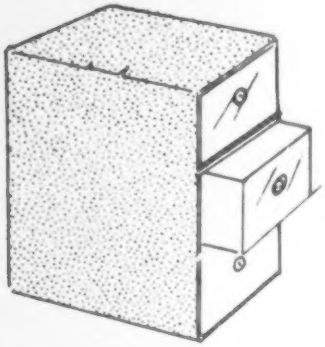
Paint house and decorate with wallpaper, carpet, curtains, and accessories.

Doll Furniture Made From Small Boxes

Materials:
- small boxes
- fabric
- paint
- glue
- buttons



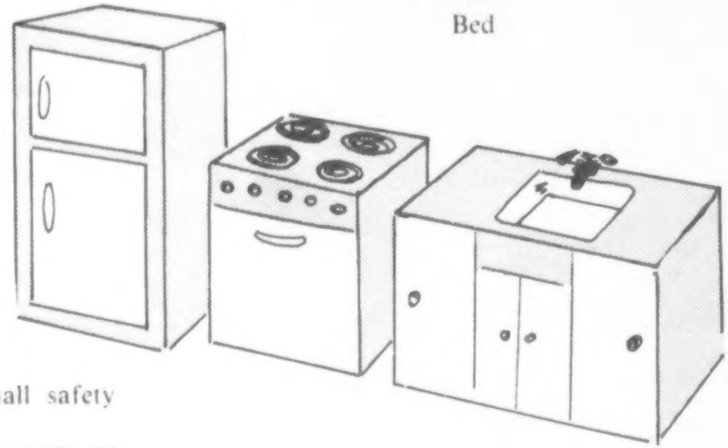
Bed

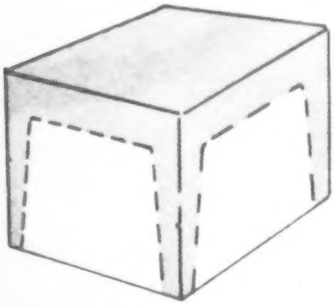


Chest of Drawers

Directions:

1. Stack and glue together 3 small safety match boxes.
2. Cover sides and top with fabric, paper, or contact paper, or paint with acrylics.
3. Glue on small buttons for knobs.





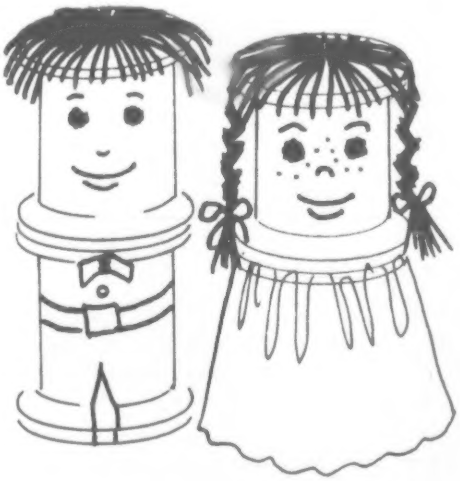
Table, Kitchen Appliances

Directions:

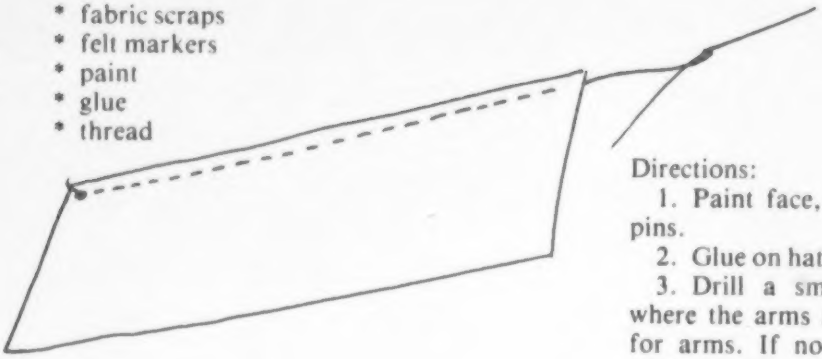
1. Use an individual size cereal box or other box of like size.
2. Cut a cardboard headboard and glue it on.
3. Decorate the headboard.
4. Glue fabric onto box for bedspread.

Dolls and Doll Furniture Made From Spools

Materials:
- empty thread spools
- yarn



- fabric scraps
- felt markers
- paint
- glue
- thread

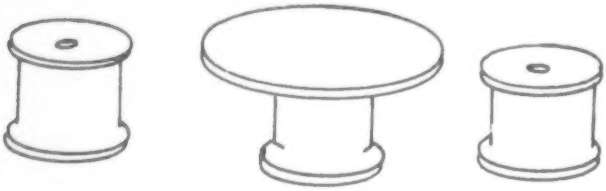


Directions:

1. Glue 2 spools together, as shown.
2. Draw face on top spool with felt markers.
3. Glue on yarn for hair.
4. For pants and shirt, glue fabric flat to lower spool. Or, draw clothes with felt markers, or paint them.
5. Make a dress by gathering a strip of fabric and tying gathered edge around spools, as shown.

Also use spools to make doll furniture.

Paint spool stools and table base. To make table top, glue a circle of cardboard to table base.

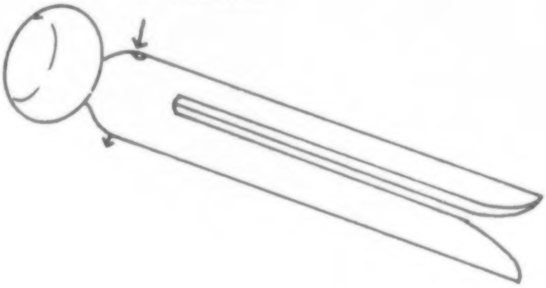


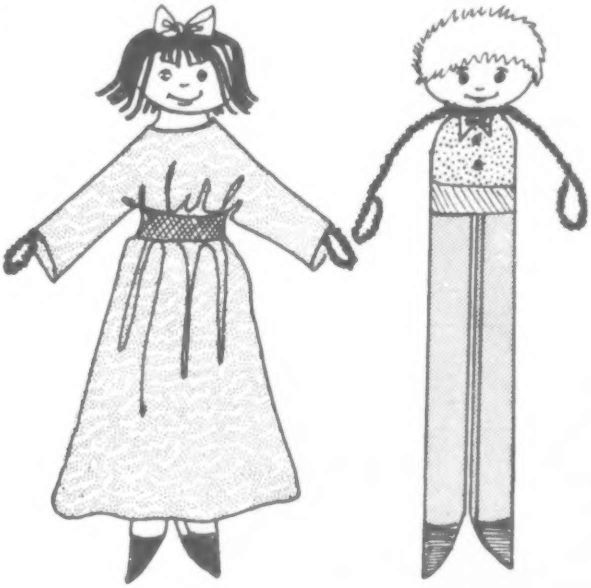
Wooden Clothespin Dolls

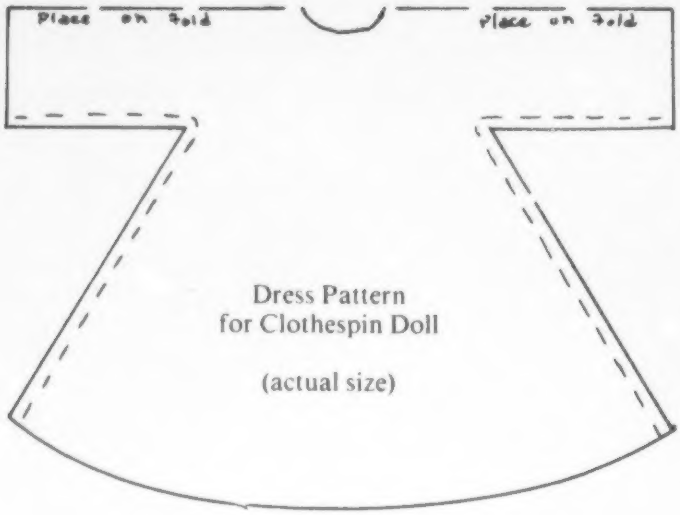
Materials:
- 1-piece wooden clothespins
- pipe cleaners
- scraps of fabric
- felt markers
- needle, drill
- thread
- yarn
- ribbons

Directions:

1. Paint face, hair, and shoes onto clothespins.
2. Glue on hat, ribbon, or yarn for hair.
3. Drill a small hole through clothespins where the arms are to be. Insert pipe cleaners for arms. If no drill is available, wind pipe cleaners around the clothespin so that ends extend as arms. Curve ends of pipe cleaners to make hands.
4. Make dresses according to pattern (dotted line is sewing line).
5. For shirts and pants, paint works best.





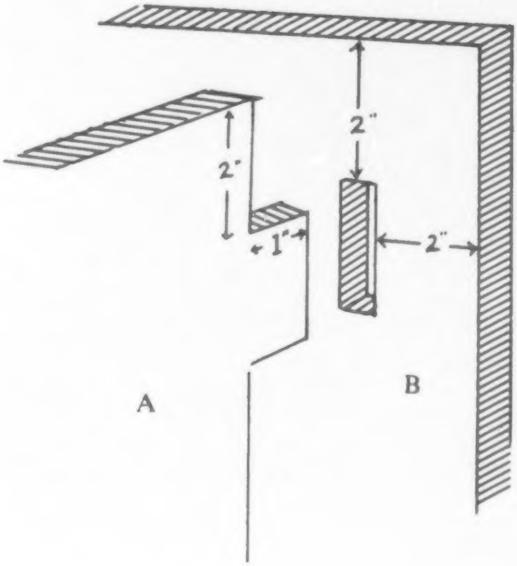

Place on fold
Place on fold

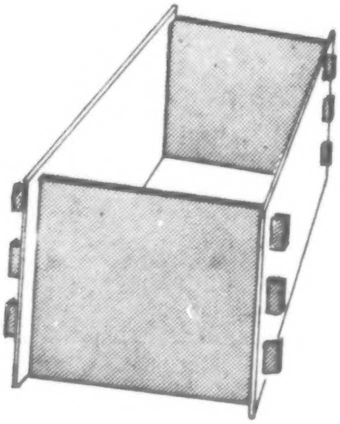
Dress Pattern
for Clothespin Doll

(actual size)

Aids for Building with Cardboard

Joining Cardboard
(Tab/Slot Method)



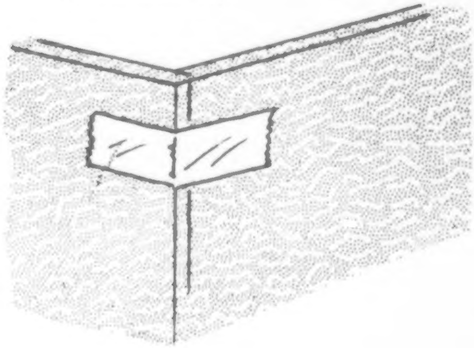


Directions:

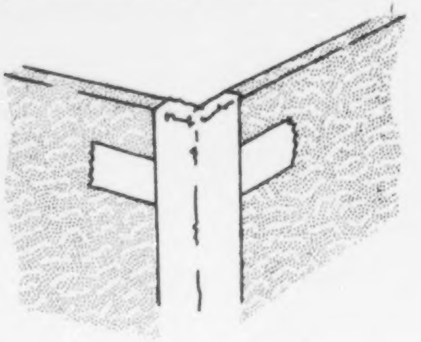
1. Measure where tab and slot are needed.
2. Cut tab on edge of section A.
3. Cut slot into section B.
4. Insert section A into slot in section B.

Taping Sides

1. Tape horizontally.



2. Tape vertically along edge and over end.



Finishing Cardboard

Paint

Use leadless paint. Acrylic paint doesn't work well unless it's shellacked. To prevent warping, paint both sides. Enamel paint is washable.

Contact Paper

Contact paper makes a nice washable finish. But it's expensive and best used for smaller items like dollhouses and waste baskets.

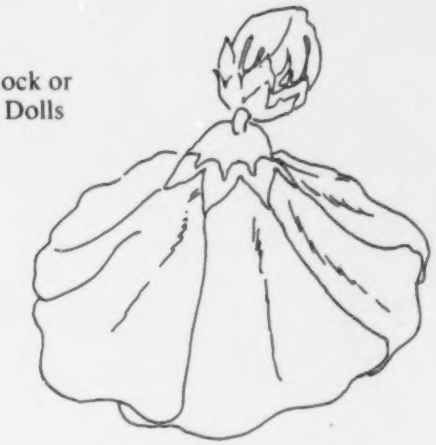
Wallpaper

Free wallpaper scraps make good finishes. Some are pre-glued.

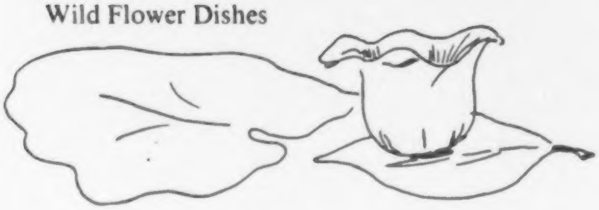
5. Toys and Props From Nature

Toys and props from nature are all around us, waiting to be used. A child naturally sees a leaf as a boat and a twig as a bridge. It is the adult's responsibility to provide opportunities for children to use their imaginations. It is also the adult's responsibility to help children understand about caring for the environment being used.

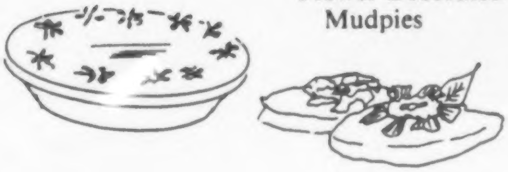
Hollyhock or
Althea Dolls



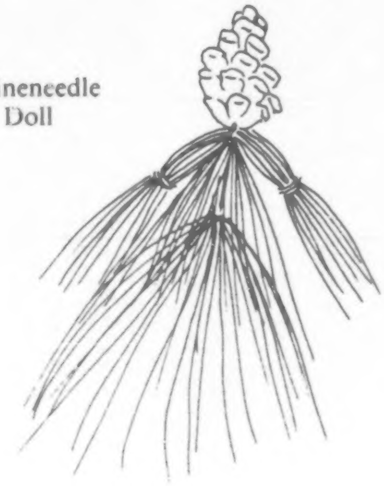
Wild Flower Dishes

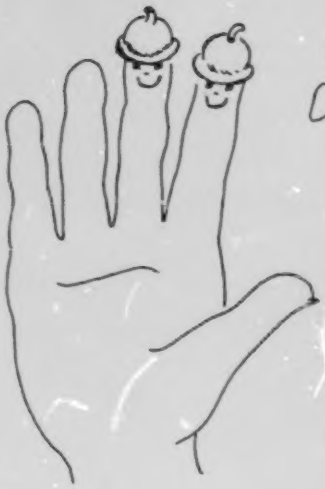


Flower-Decorated
Mudpies

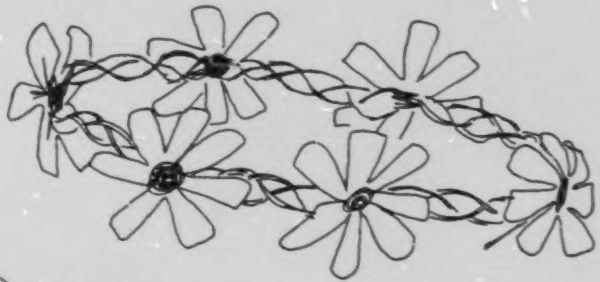


Pineneedle
Doll

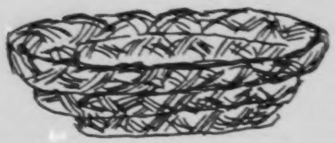




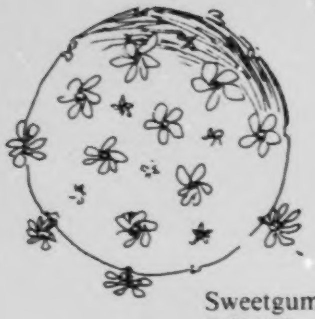
Acorn-Cap Puppets



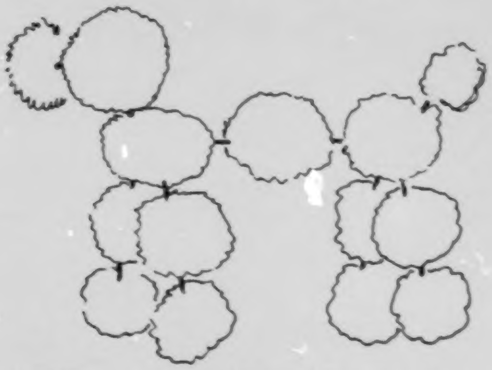
Daisy Crowns



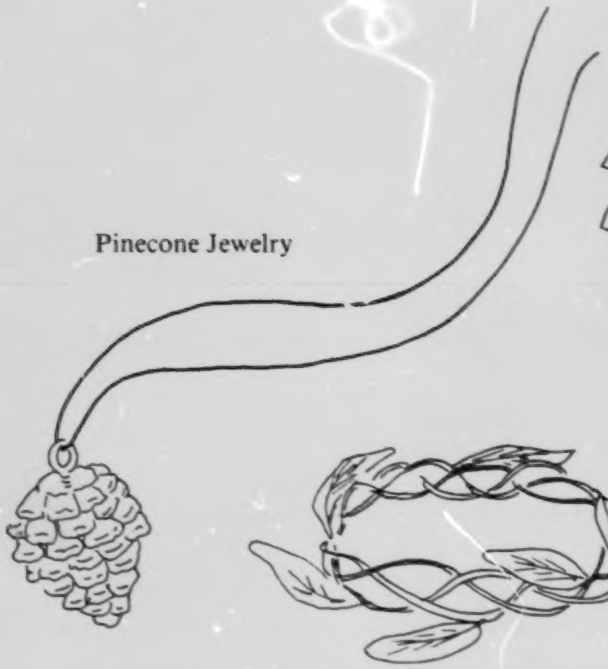
Braided Grass, Coiled into Bowls or Pads



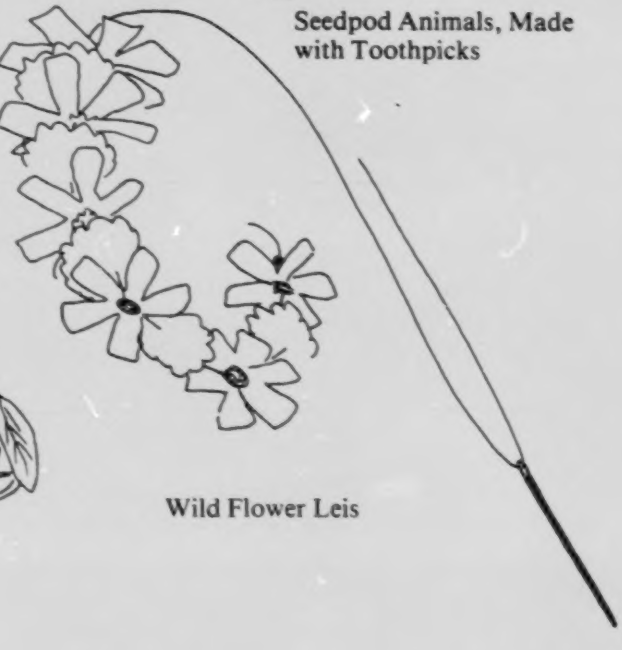
Sweetgum Balls, Decorated with Wild Flowers



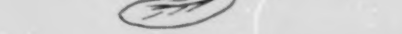
Seedpod Animals, Made with Toothpicks



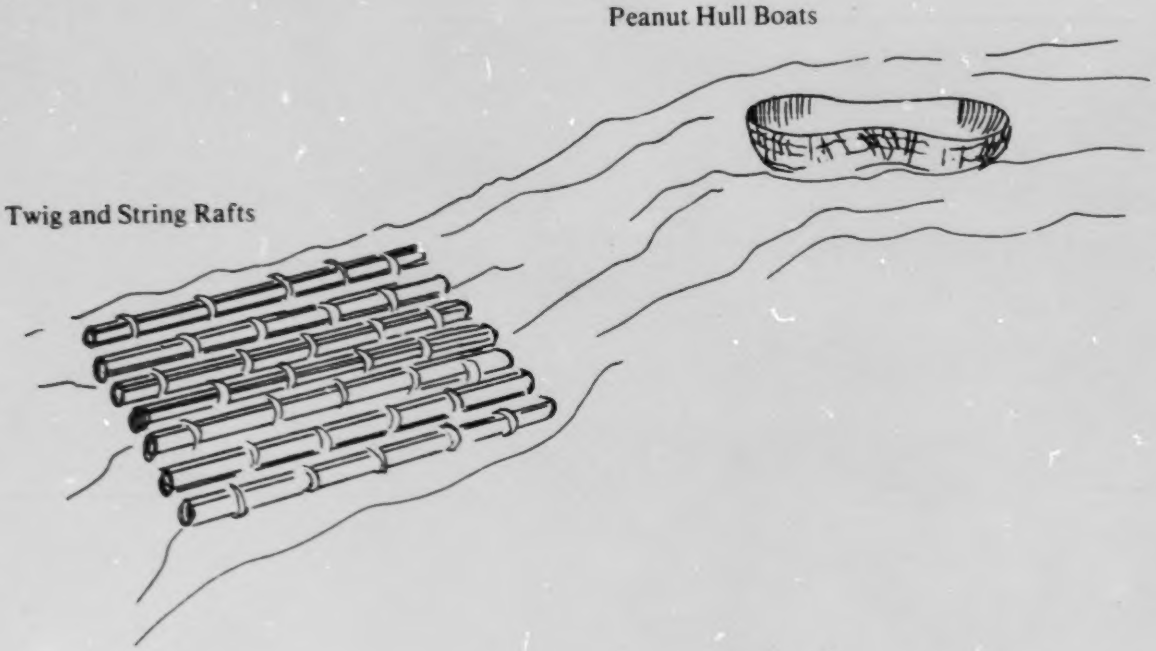
Pinecone Jewelry



Wild Flower Leis



Braided Honeysuckle Bracelets



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DAY CARE for School-agers

PS 010257

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Developing the Child's Environment

1. Overview

An attractive, comfortable, orderly environment is necessary in school age day care. The skills, interests, and number of children and staff; the location, size, and design of indoor and outdoor space; the quantity, quality, and type of equipment and materials; and the understanding and cooperation of parents — all are important factors.

School age day care often shares space and equipment with another program, such as school, church, or preschool day care. In such instances, careful planning and cooperation is essential.

If room arrangement, equipment, and storage space contribute to positive attitudes and desirable habits, children will:

- Gain independence. If they know where things belong, they will fetch and return them. There will be a smooth-running program — fewer questions, less tension and bickering, busier and happier children.
- Assume responsibility. Help them learn how to take care of equipment, when and how to repair things, and return games, etc. in good order to the proper places. (One center has a check-out system for outdoor equipment. Children write their names and what they're using on a posted sheet when taking something to use. They mark off their names upon returning the items.)
- Develop pride in accomplishments and possessions. It is important to each child to have a place to keep personal possessions. This may be a box or shelf, labeled with the owner's name. Possessions might include something made, a collection to show, a book being read, or on-going craft and carpentry projects.
- Gain respect for other's possessions. If a child's work and possessions are treated as worthwhile by adults, the child will develop respect for other people's things. A clay pot takes time to work on — continued interest will be maintained only if there's space to protect it and handy equipment.
- Feel good about having their physical, social, emotional, and mental needs met.

2. Indoor Environment

Assessing Needs and Making Plans

1. Consider the needs of children in general and obtain information about specific needs. Rely on general knowledge about school-agers, then individualize as quickly as possible.
2. Inventory the facility, equipment, and space. Determine what must stay in the room, what is to be shared, what is not needed. Try *not* to think about what something usually is used for -- instead, think about what it *could* be used for.
3. Determine the purposes for equipment and storage.
4. List program needs in order of importance. Plan to meet needs within a defined time frame. Consider which needs can be met immediately, what will affect the children the most, and what will lighten staff work the quickest.

Use of Space

The environment planned for school age day care depends upon the facility. If everything must be put away at the end of the day, examine storage space and plan short-term daily activities and easily-stored projects. If the center is used by another group only on weekends or not at all, longer activities can be planned.

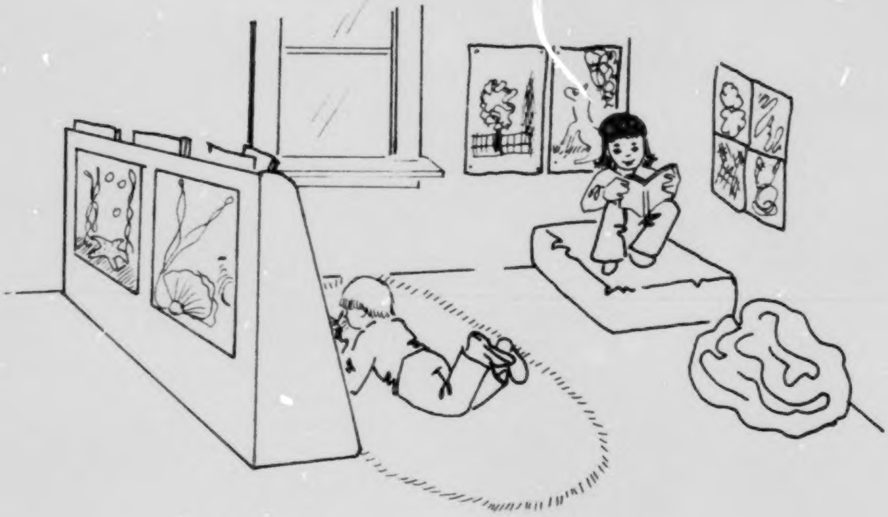
Indoor environment should include areas designated for specific activities. Areas to consider include:

Quiet Area: Children can do homework, read, rest, or take part in other quiet activities. The area could be in a back room or a special area of the main room. Large pillows, a rug, and table and chairs are some items that could be provided. Directions for making pillows and pads are provided in this section and in the arts and crafts section entitled "Soft Sculpture."

Active Area: Here, there is space for arts and crafts, dramatic play, games, music, and movement activities. The area should be near a water source, if possible. Props for dramatic play might range from a stove made from cardboard boxes to scarves and clothes from home.

The arrangement of space affects how children will use it, and can increase or decrease discipline problems. For maximum efficiency and safety, the following should be considered:

- Centers should be arranged so minimal traffic flows freely. Equipment should be stored as close as possible to where it's used. Main traffic lanes to and from the doorway, bathrooms, and drinking fountain should be free of obstacles. If children jostle and shove as they move around the room, traffic lanes may be too narrow or too many children may be moving at the same time.
- Adults should position themselves so they always can see most of the children.
- Quiet activities should be away from noisier ones. Children doing homework or playing games need to concentrate.
- Consider lighting when planning the room arrangement. Areas requiring close visual work should be close to windows or other light sources.
- Rugs and carpeting stifle noise and provide a warm, comfortable play surface. Uncarpeted areas should be kept clean, but not so slick that children might slip on them.
- Storage should be planned so children can obtain and return things independently. Cleanup materials should be handy so children can cleanup their messes.
- If possible, a given area always should be used for the same type of activity. For instance, if the room is a school cafeteria, tables near the window could be for reading and homework, tables against the far wall for art and crafts, etc.

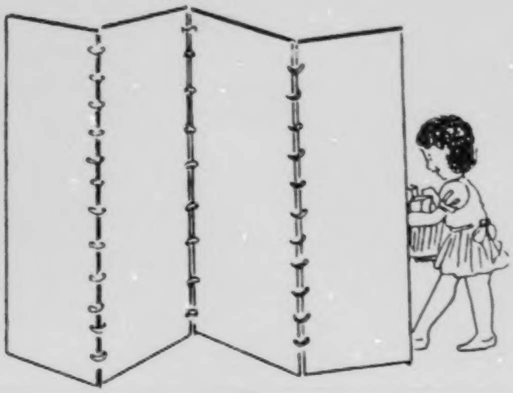


Planning Private Places For Children

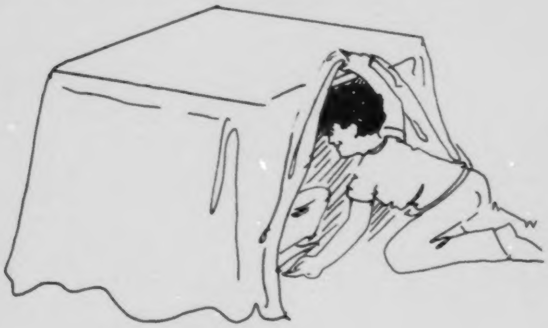
It's important to have a place and time to be alone, to gather one's thoughts, to relax and enjoy getting to know one's self.

Pay special attention to room arrangement. Use shelves, tables, or other furniture to define areas. A rug, mat, or pillows near the book center (or music area or science shelf), will make the area comfortable.

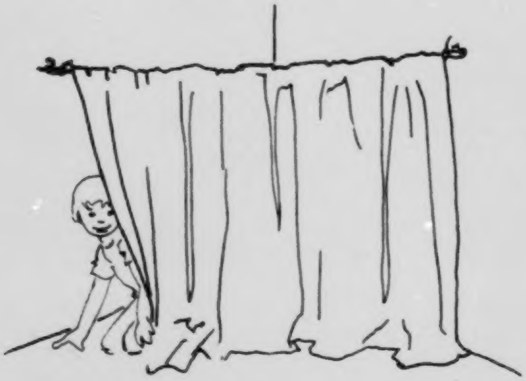
Cut open large cardboard boxes and spread them flat. Join them by lacing through holes punched in the cardboard. Refold them into a zigzag screen. If desired, cover with cloth.



Playhouses and hiding places are fun indoors. A sheet draped over a card table is a good playhouse for a rainy afternoon.



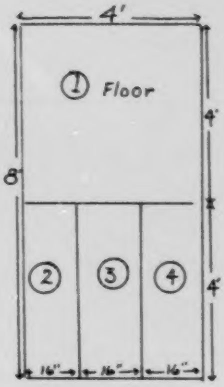
Or, hammer a nail in each of two walls near a corner. Tie heavy twine from one nail to the other. Hang an old sheet across the twine.

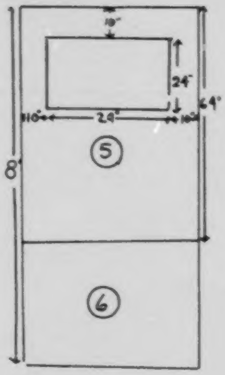


A more permanent and adaptable playhouse can be made from sheets of plywood or particle board. Built to fit in the corner of a room, the two walls and floor are held in place by braces which are 2 by 2 inches. Floor and braces may be omitted if walls are *nailed* to existing walls of the room.

Materials:

- 2 sheets plywood or particle board, 2 feet by 4 feet by ½ inch
- 14 wood braces, 2 by 2 inches by 6 feet
- 24 wood screws, each 3 inches long





Directions:

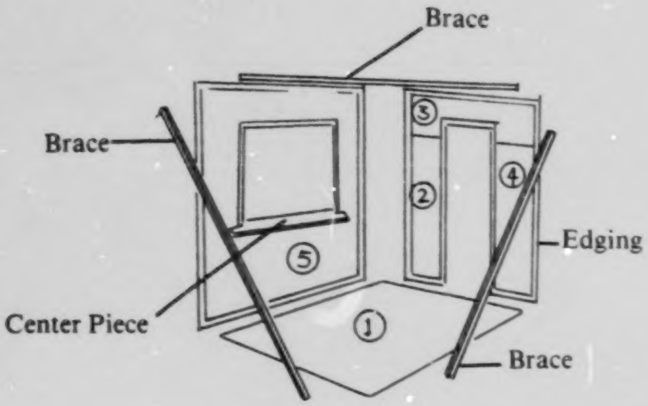
Cut sheets of plywood as shown in sketch. Pieces 2, 3 and 4 are laid out to form a wall with a doorway (see next page). The doorway may be 4 feet high or cut higher into piece 3. Cut pieces of 2-inch by 2-inch edging to strengthen the inside edges of the wall and doorway. Nail in place.

Cut the window in piece 5, as shown. Cut counter piece from piece 6, fit in place at the bottom of the window. Strengthen the wall with 2-inch by 2-inch edging pieces around other sides of window and around wall.

Screw the walls together at corner then nail edging at bottom of walls to the floor (piece 1). Screw braces into place. Paint inside and out. Other 2 walls of playhouse made by a corner of the room in which the house sits. (See following illustration.)

Use extra plywood to make furniture or shelves.

A cardboard carton, large enough for a child to walk into, can be turned so it opens on its side. Use a flap as the door. Tape the other flap closed for support.


Brace
Brace
③
②
④
Edging
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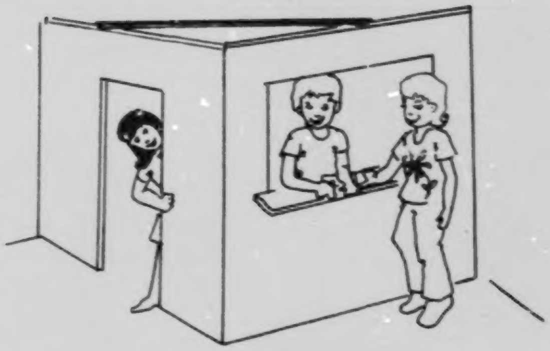
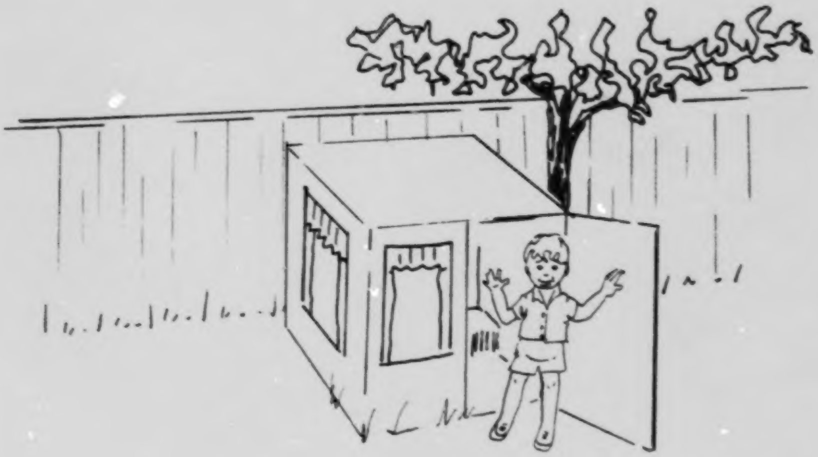
Center Piece
①
Brace

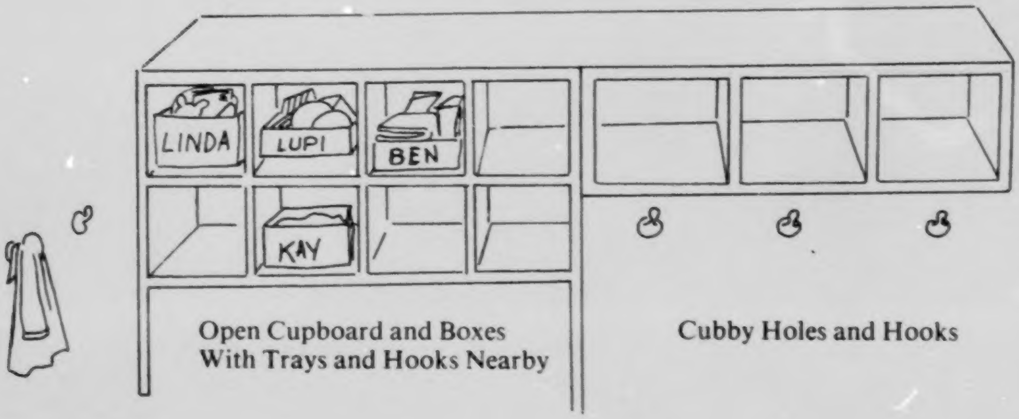




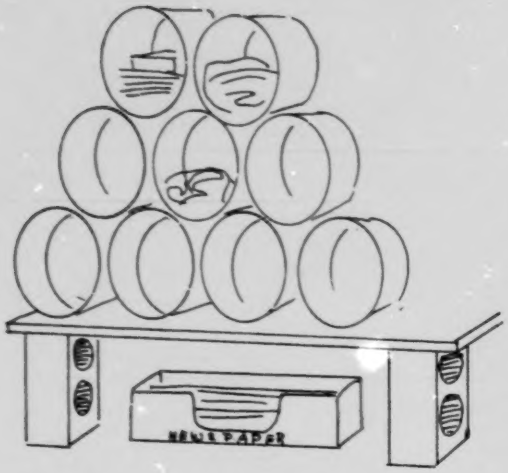
Storage For Personal Belongings

Having special places for children's personal belongings helps them feel respected and gives them opportunities to be responsible.

Open Cupboard and Boxes
With Trays and Hooks
Nearby

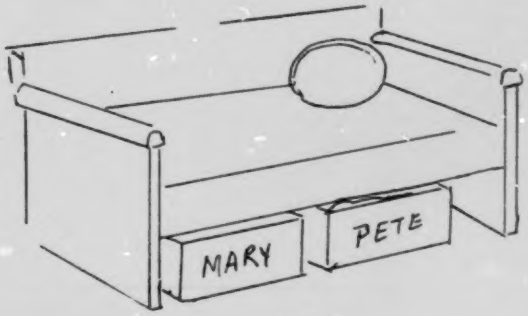

LINDA
LUPI
BEN
KAY
Open Cupboard and Boxes
With Trays and Hooks Nearby
Cubby Holes and Hooks

Ice Cream Cartons
Stacked and Glued



Locate cubby holes or lockers near the play area, low enough for the children to reach easily. Label with each child's name.

Have storage boxes for treasures and extra clothes. In a day home, this might be under a sofa.

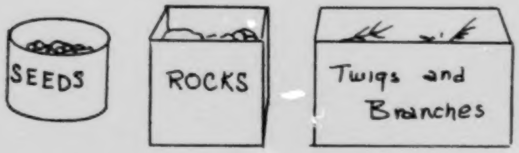


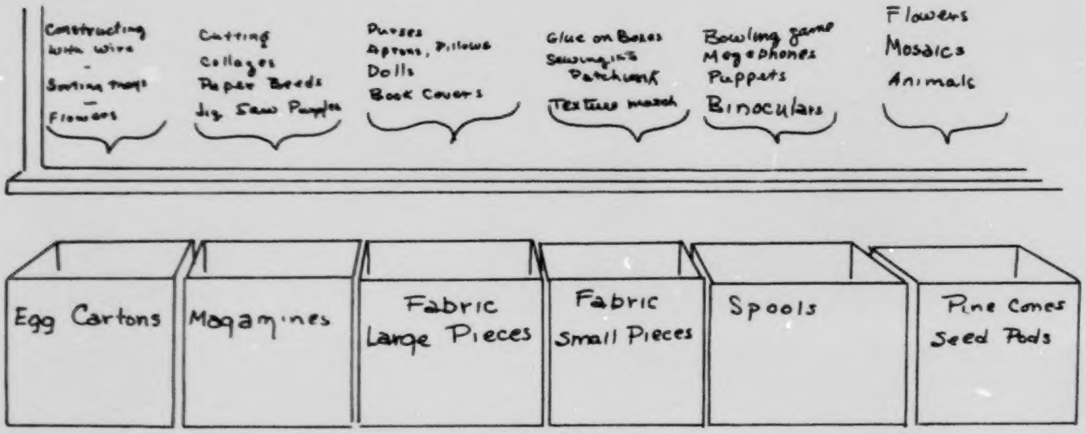
Storage for Collections

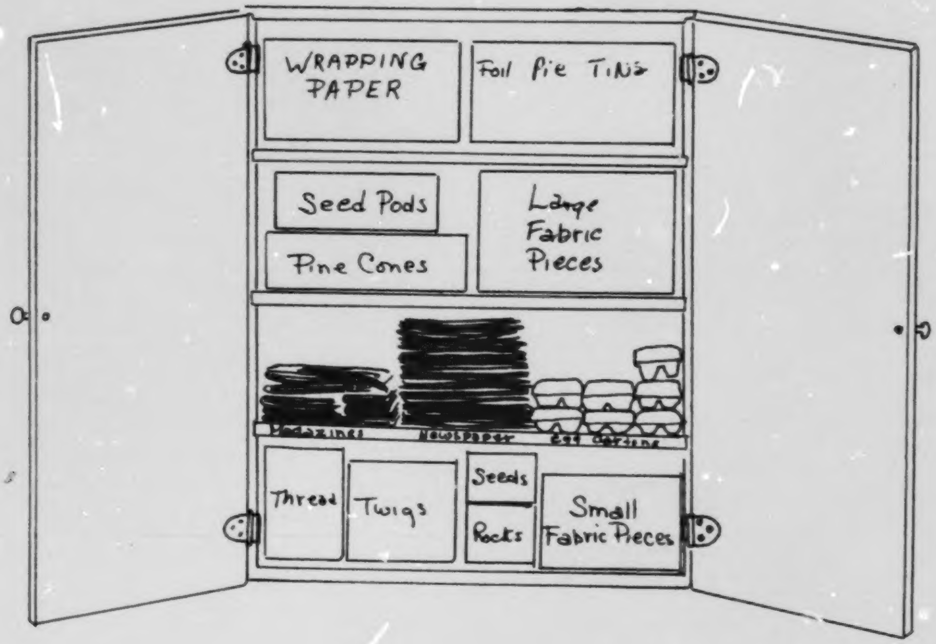
Share ideas by listing them on the chalk board or on boxes. Display items to generate new ideas.

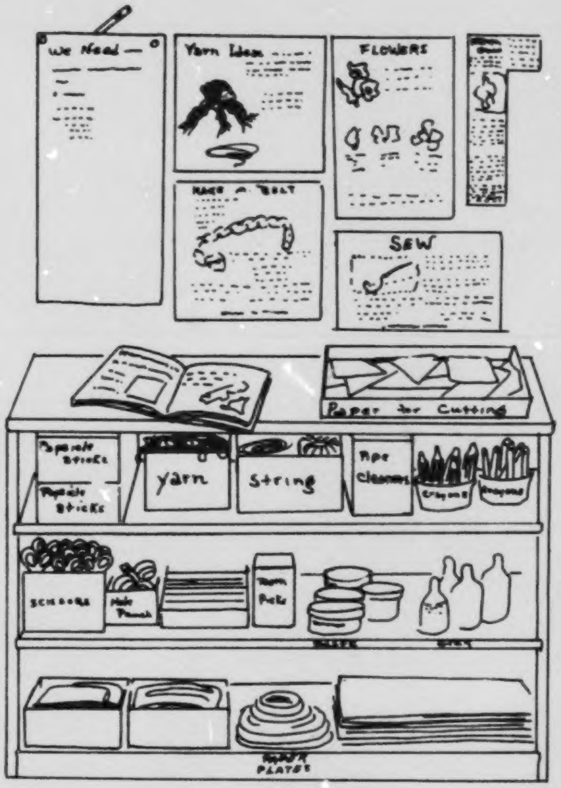
Add more containers for things found by the children.

Use closets for collecting and storing. They're out of the way yet easily accessible. Store items in labeled boxes on the shelves.


SEEDS
ROCKS
Twigs and Branches


Constructing with wire
Sorting trays
Flowers
Cutting
Collages
Paper Beads
Jig Saw Puzzles
Purses
Aprons, Pillows
Dolls
Book Covers
Glue on Boxes
Sewing kits
Patchwork
Texture match
Bowling game
Megaphones
Puppets
Binoculars
Flowers
Mosaics
Animals
Egg Cartons
Magazines
Fabric Large Pieces
Fabric Small Pieces
Spools
Pine Cones Seed Pods


WRAPPING PAPER
Foil Pie Tins
Seed Pods
Pine Cones
Large Fabric Pieces
Magazines
Newspaper
Egg Cartons
Thread
Twigs
Seeds
Rocks
Small Fabric Pieces


We Need —
Yarn Ideas
FLOWERS
MAKE A BELT
SEW
Paper for Cutting
Popsicle Sticks
Popsicle Sticks
yarn
String
Pipe Cleaners
Crayons
Crayons
Scissors
Hole Punch
Tooth Picks
Paper Plates

Storage for Arts and Crafts

Tape ideas on wall or window near the supplies and keep craft books on the shelf top.

Add new ideas and materials as the schoolagers think of them.

Post a list near the door for staff to list what is needed.

Spillable items such as glue, starch, and paints can be distributed from a center table. Make cardboard trays to carry the liquids. See "Transporting Items."

Provide applicators for glue and paste, such as popsicle sticks or Q-tips, so that scissors need not be used.

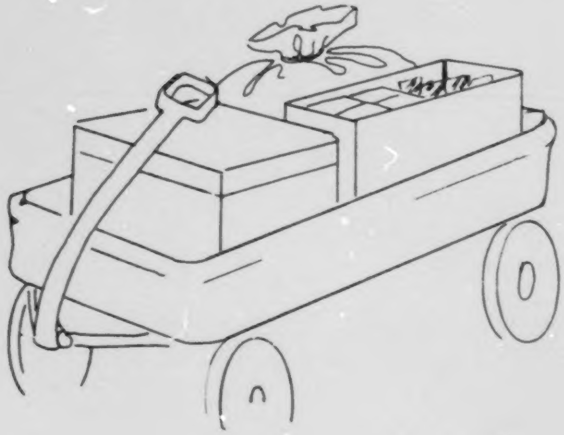
Keep paper scraps so that when a small piece of colored paper is needed for a project, it will be unnecessary to use a whole sheet.

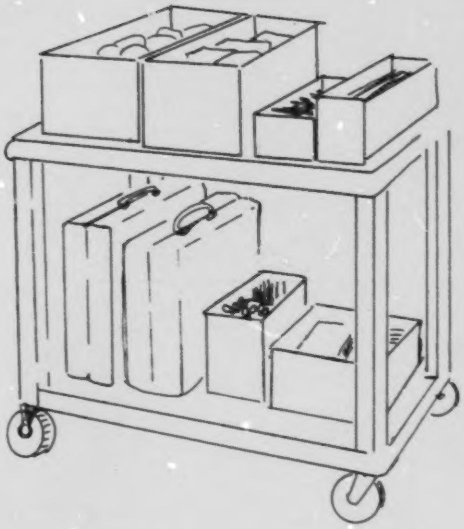
Carrying Equipment and Supplies

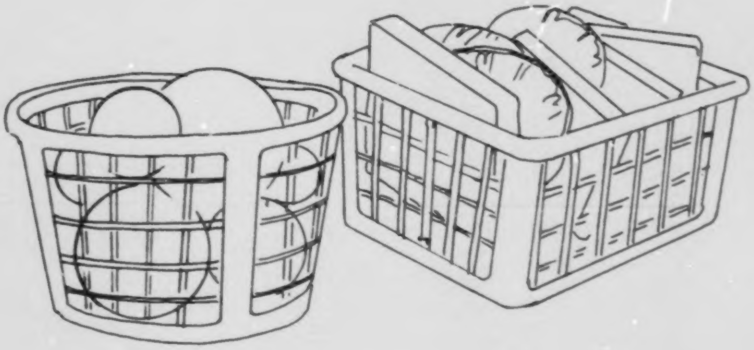
A younger child's wagon or a homemade dolly can be handled easily by school-agers.

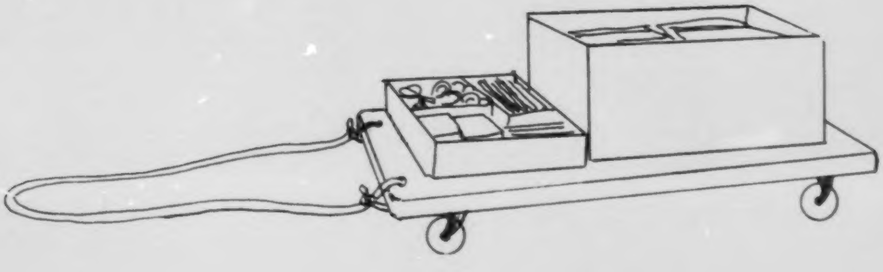
Laundry baskets are light and provide easy storage for balls and soft items such as floor pillows.

Remember to label the boxes.



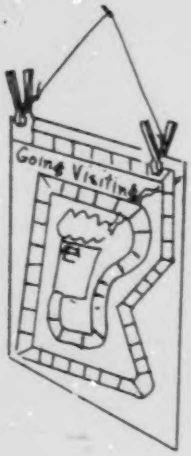


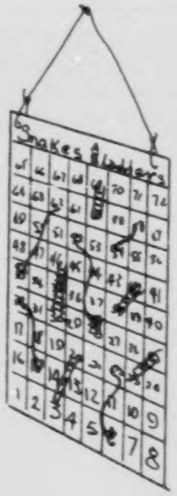


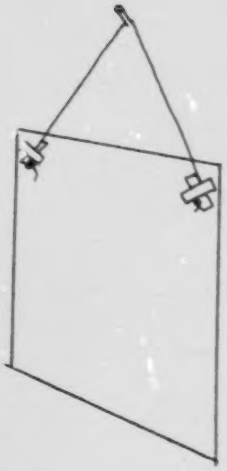


Storing for Games and Game Pieces

Hang cardboard game boards on walls of the playroom and hall, both sides of inside doors, backs of cabinets and book cases, and from the ceiling as room dividers. One small nail will hold a game board. Nails should be above the children's eye level to prevent injury but low enough for the children to reach.



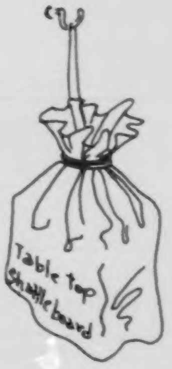


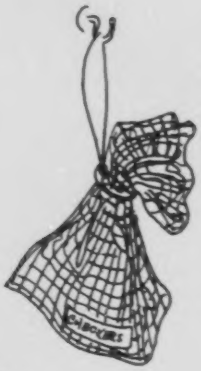


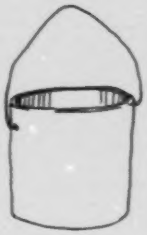
Tie a heavy string to clothespins. Lace string into holes punched along one end. Tape string ends to back of game.

Hang pieces with the game board, using the same nail. Label the containers or put game pieces on a narrow cardboard shelf.

Use a grocery sack or plastic trash sack. Print name of game on sack. Use a mesh vegetable sack. Staple or tape on the label. Punch holes in opposite sides of a tin can. Bend heavy wire to make a handle. Tape on the label.







Book Racks

It's good for children to be able to choose, use, enjoy, and care for books. Books should be displayed so the children can see them individually, reach them, and return them without help.

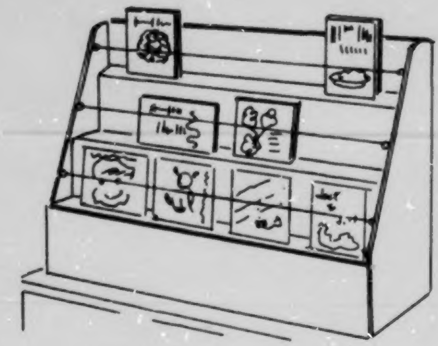
Book pockets don't take up much space. Cut them so the front of each book is as visible as possible. It should be easy to get a book in and out of pockets, but pockets should be tight enough to prevent the books from falling out. The size of the pockets should be determined by the size and number of books to display and the available space. The size of the pockets shown below is 22 inches wide by 28 inches long. A paper pattern can help with sizing and spacing the pockets. Allow about an inch at the bottom and sides, and about 2 inches at the top for hems. For pocket pieces, cut the pattern in long strips

1.0
2.8
2.5
3.2
2.2
3.6
4.0
2.0
1.1
1.8
1.25
1.4
1.6

MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS 1963-A

with a ¾-inch hem and seam allowance all around, and room for small tucks at the corners of each pocket. Allow an inch between each book.

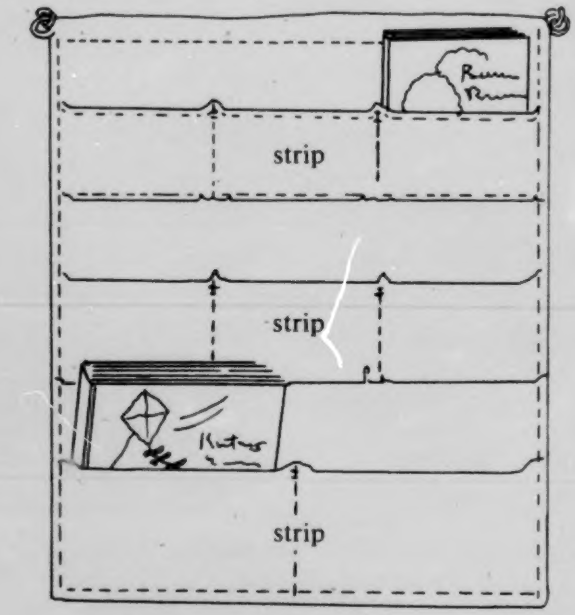


Pockets can be bound with fabric or bias tape, or turned under and top-stitched along the edges.

Slide strong curtain rod or ½-inch wood dowel through a casing at the top and hang on 2 hooks. Or, insert grommets through the double thickness of fabric at the top.

Search the sewing closet for remnants of heavy fabric. If buying material, choose a 30-inch length of fabric 45 inches wide.

Encourage the children to handle books carefully. Having a specific place to put a finished book reduces the possibility of its being left on the floor and damaged.



Bulletin Boards

Bulletin boards can communicate messages to parents and children. They should be thought-provoking, focus on one idea, and be simple in design. Informal balancing is effective, with bright colors or unusual shapes to draw attention. Contrasting colors are attractive. Repetition in color, size, or shape helps unify. Captions should be short and catchy.

Materials for Construction

- Corrugated board is available in assorted colors, thicknesses, and fluting. Holes remain when tacks and staples are removed.
- Hard board and plywood can be used, but are difficult to get tacks into.
- Perforated hardboard, or pegboard, can be used for displays or storage walls. Golf tees fit into the pegboard holes to make hanging devices.
- Particle board does not warp and can be painted with one coat. It does not hold screws against tension.
- Cork sheets are available in a variety of thicknesses and colors.
- Fabric scrolls can be made by hemming opposite ends of a length of fabric, slipping dowels in the hem, and hanging from one end. Insert a screw eye in each end of one dowel, attach a cord and hang from a nail.
- Bulletin boards can be attached to the wall with wire and screw eyes, screws, or adhesive materials. Consider the weight of the bulletin board when hanging it.

Materials for Mounting

Paper, fabric, cork, or paint can be used for background. Materials to be mounted can be stapled or thumb-tacked. Use rubber cement for a more permanent display.

Letters can be bought or made. Construction paper, fabric, cardboard, plastic, wood, yarn, or cork are a few of the many items that can be used. Or cluster map pins to form letters.

For mounting, use rubber cement, white glue, double-backed cellophane tape, push pins, map pins, staples, or tacks.

Children's Bulletin Boards

Place the board at the child's eye-level. Change it often. Vary textures and techniques. Black and white pictures should be backed by color. When mounting colored pictures, use complementary colors for background. Group smaller pictures together. Back pictures of similar subjects with the same color. Let children help create the bulletin boards. Use their ideas and artwork. Some sources for pictures are:

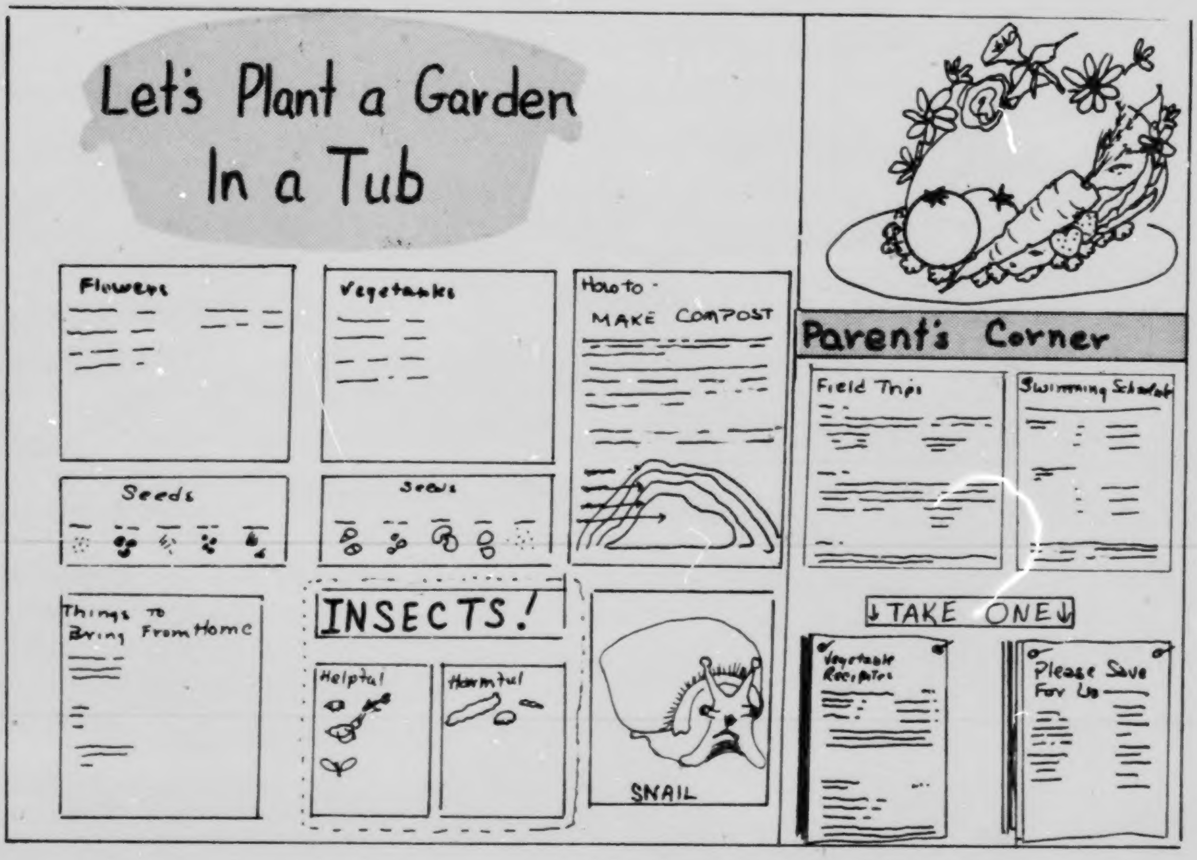
- magazines
- calendars
- photographs
- wallpaper
- old books
- wrapping paper
- catalogs
- newspapers
- picture postcards
- greeting cards

Bulletin Boards For Parents

Bulletin boards are a good way to get important messages to parents.

Remember:

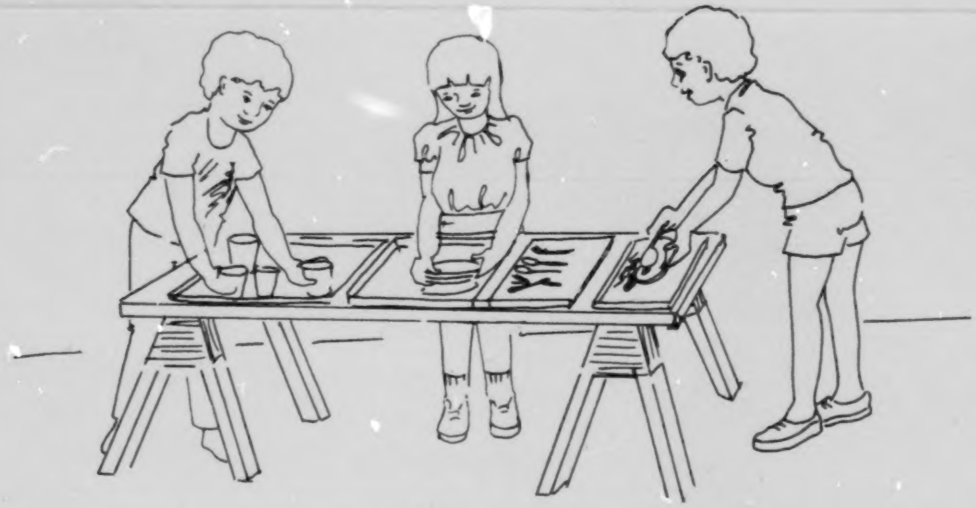
- People read left to right.
- The most effective bulletin board contains one message that can be understood at a glance.
- Cost and teacher time should be kept at a minimum.
- Locate the bulletin board where parents will be sure to see it: by the door or near the coat area, for instance.
- Notices for parents to take home can be a regular feature.


Let's Plant a Garden In a Tub
Flowers
Vegetables
How to - MAKE COMPOST
Seeds
Seeds
Things to Bring From Home
INSECTS!
Helpful
Harmful
SNAIL
Parent's Corner
Field Trips
Swimming Schedule
↓TAKE ONE↓
Vegetable Recipes
Please Save For Us

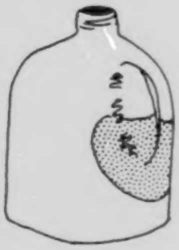
Clean-up Equipment

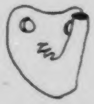
After Eating

Use a container for food discards and trays to sort used utensils. Place on a bench or improvised table, as shown, or any flat surface high enough for comfort and large enough to hold the trays.

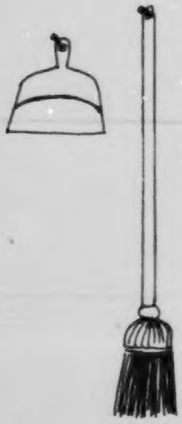


Cut out shaded area from a gallon plastic bottle.



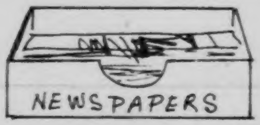


Fasten to wall with carpet tacks.



Hang broom and dustpan on hooks

Keep newspapers handy for soaking up spills.

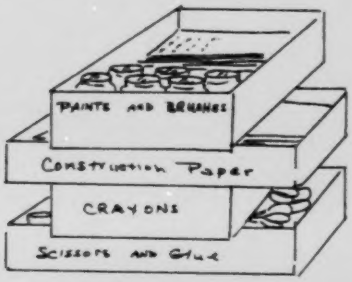


Hooks also can be used to hang outdoor equipment, such as hoes and jump ropes.

Containers for Small Equipment and Supplies

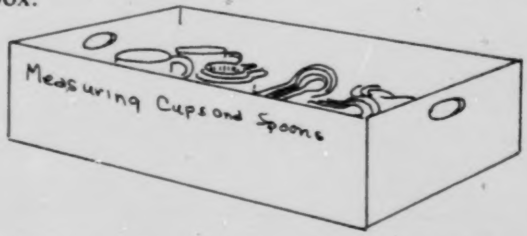
Storage In Trays

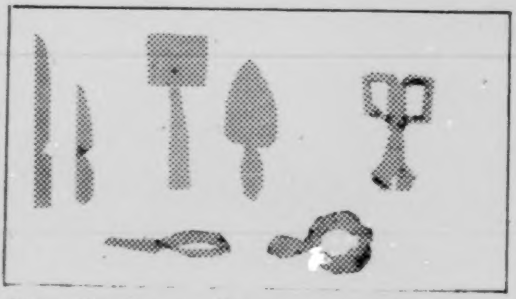
The tray system for arranging art equipment or getting things together works well. Cut off 24 by 12-inch cardboard boxes to about 5 inches high. Label each box with a description of the contents. Another possibility is to color-code the boxes so readers and non-readers can know what's stored where. For example, paint cans and brushes could have blue plastic tape on them and be stored in a box covered with blue contact paper; crayon boxes could be marked with yellow tape and their storage boxes covered with yellow contact paper. Stack trays for storing but not when being used.



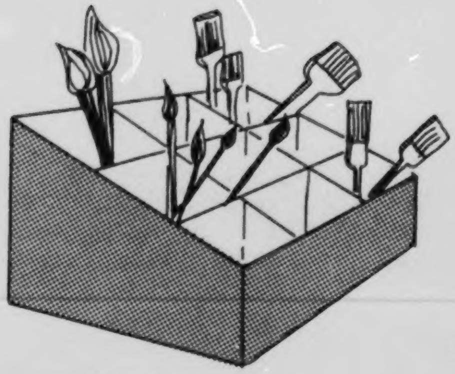
Storage Boxes for Small Items

Each type of utensil could be stored separately. For example, small cooking utensils, fruit and vegetable preparation tools, and measuring cups and spoons, each could have a separate box.





Idea: Stack utensils on appropriate shaped cut-outs glued to a tray or shallow box lid.



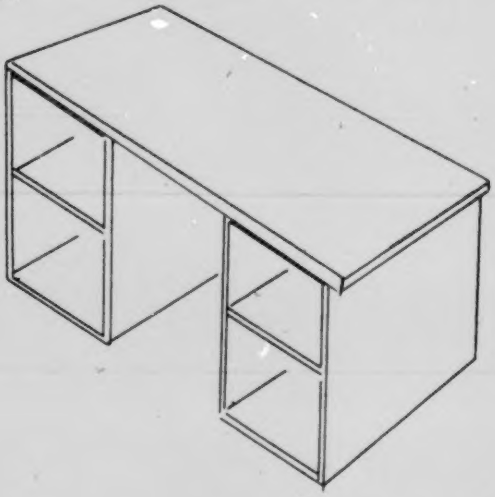
Milk-Carton Caddy

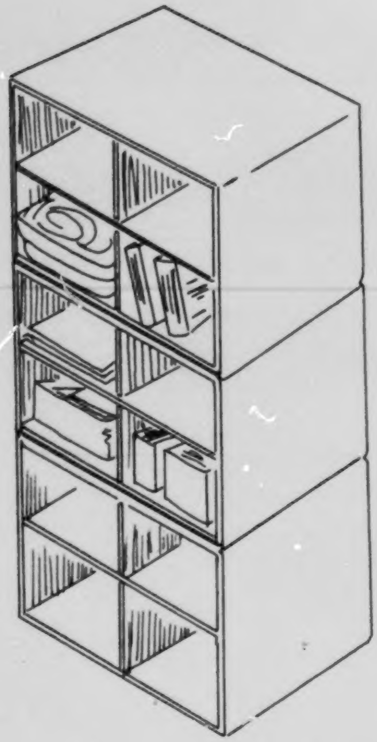
Half-gallon milk cartons make excellent storage containers. To make the caddy shown above, group 9 cartons together and draw slanted lines down opposite sides at the same height. Cut along slanted lines and straight across back and front. Cover outside of caddy with contact or wall paper.

Storage in Large Cardboard Boxes

With simple hand tools and a minimum of effort, school-agers can make seats, storage units, desks, and a variety of toys. Cardboard can be cut, sawed, taped, stapled, doweled, glued, and aced. It also can be waterproofed, fire proofed, painted, and sprayed.

Cheap, sturdy bookcases, storage walls, bureaus, and dressing tables can be made from liquor and wine cartons in half-gallon and gallon sizes.

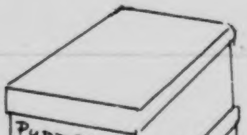




Stick boxes together with contact cement. Use wide masking tape to finish the front edges of boxes and dividers. Do not stack cartons higher than 48 inches. Pieces of scrap-iron in the backs of the bottom shelves will keep the shelves from tipping. Plywood tops make a finished appearance and provide good work space.

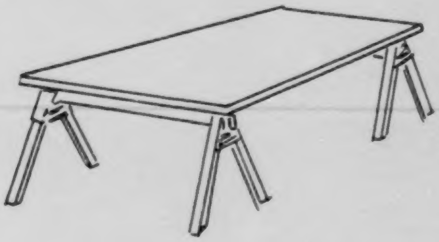
Boxes with tight fitting lids are best for storing seasonal or little used items, or for carrying things.

Label boxes clearly to avoid having to look through the stack every time something's needed.

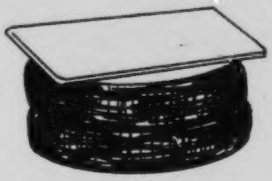


Work Space

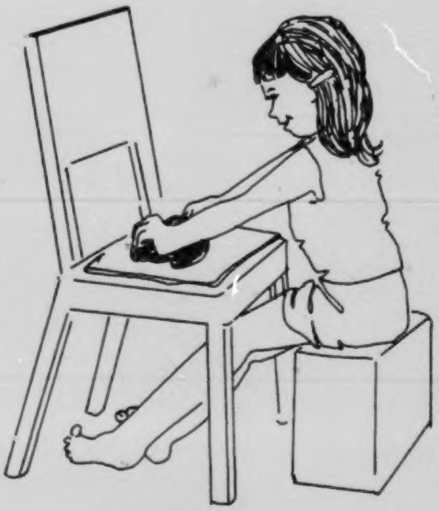
Provide lots of table area for the children to work on. A 3-foot by 6-foot piece of ¾-inch plywood on 2 sawhorses makes a good work table.

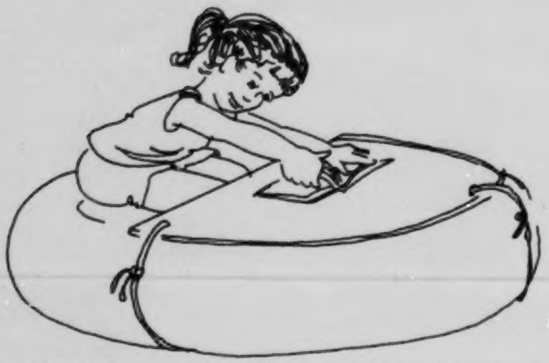


Two discarded auto tires make a solid base for a work table with a plywood top.



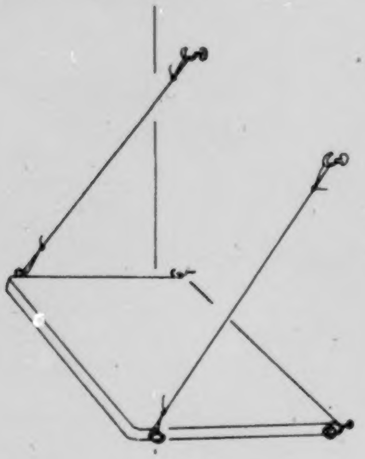
School-agers can improvise and use rugs, cardboard boxes, or chairs to work on.





Large inner tubes from road equipment or airplanes are fun to sit on. And they make interesting desks when fitted with a half circle of painted plywood, held in place with heavy ties.

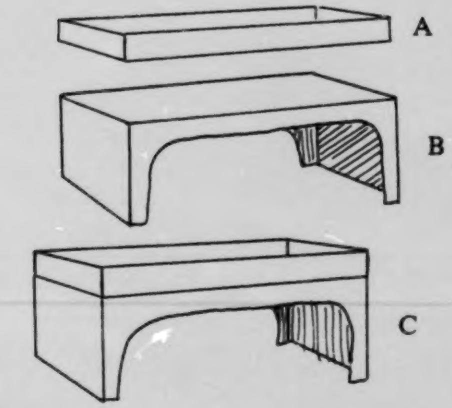
Hanging tables are easy to assemble and hang on the wall, out of the way when not in use, and can be used as display shelves.



Tables may be any size. Round the corners of a piece of plywood or board, and sand the edges and corners. Insert screw eyes at each end of the sides, as shown. Decide on the proper height and insert large cup hooks in the wall. Then hang the table. Place 2 other hooks higher on the wall, tie heavy cord on the hooks and measure with the table raised. Then tie the loops in the end of each cord (cords must be of equal lengths). To use the table, slip loops over the front screw eyes.

Tray Tables

Materials:
- tray as pictured (A)
- another box (B) the same size or a little larger to be the base of the tray table



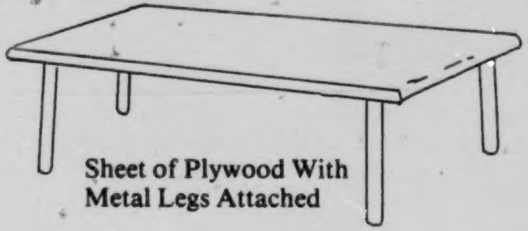
Directions:

Cut the second box as shown. Glue the tray and base together (C).

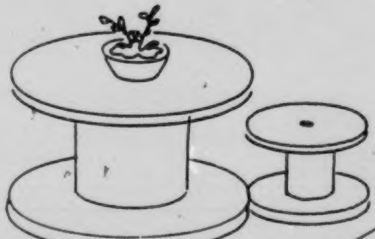
Tables are useful for meals, art work, and games. Tables longer than 5 feet and wider than 30 inches might take up too much space.

Tables used for meals and messy art work should be washable or have washable coverings.

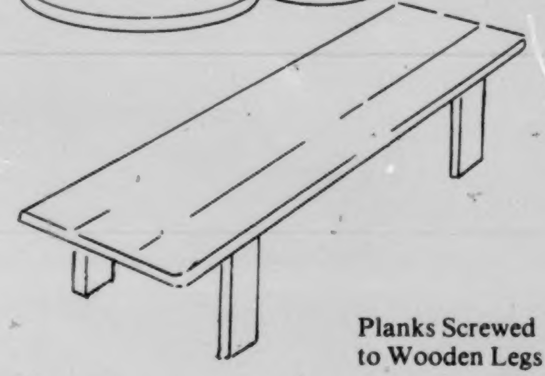
To economize, use slab doors, plywood, or planks as table tops.



Sheet of Plywood With Metal Legs Attached



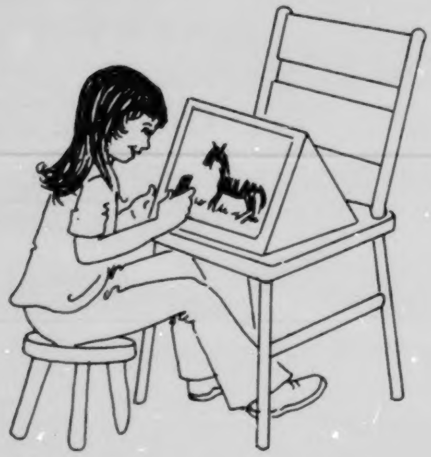
Cable Spools



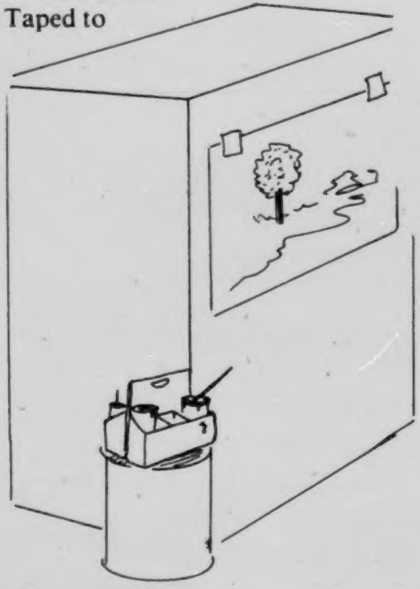
Planks Screwed to Wooden Legs

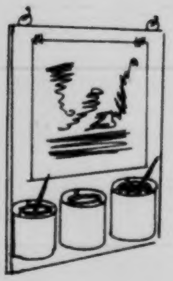
Easels For Painting

Diagonally-Cut
Cardboard Box on a Chair



Large Cardboard Carton
With Paper Taped to
the Sides



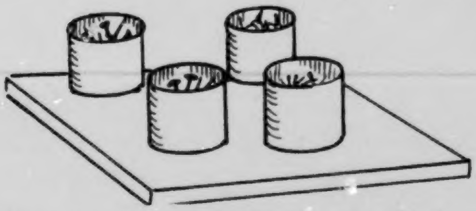


Wall Easel (made from a piece of plywood hooked to the wall, or to a fence, jars of paint in cans nailed to plywood)

Woodwork

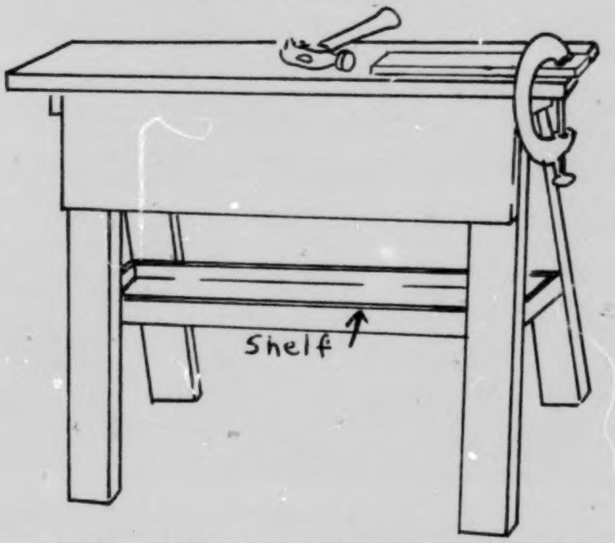
For woodwork, a sturdy table or work bench, storage for tools, lumber, and small items such as nails, glue, and oddments are needed.

Container for Nails



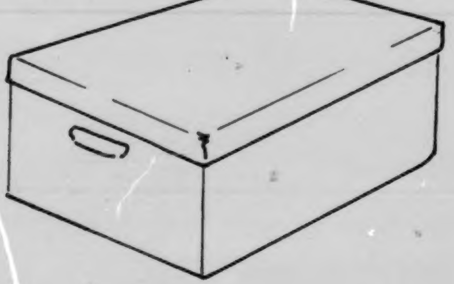
Fasten cans to a small board. Put plastic lids on cans when nails are not needed.

Small Work Bench



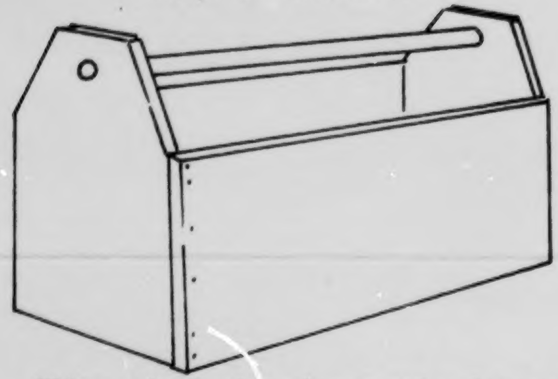
Use for other purposes when not needed as a work bench.

Storage for Wood Scraps,
Shavings, Sawdust



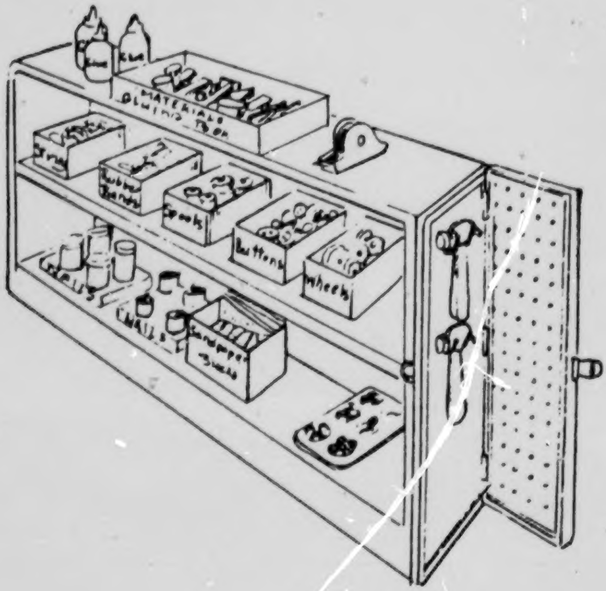
Use heavy cardboard boxes with lids.

Carpenter's Tool Box



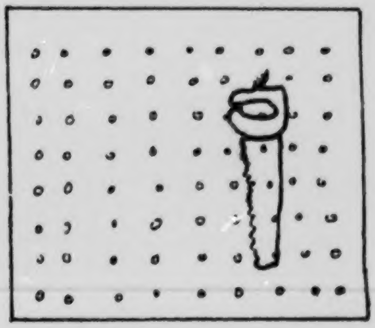
Either make the above from wood or fasten a cord to use as a handle to a sturdy, oblong cardboard box.

Collect small boxes and other containers for storing small items. Ask a hosiery or department store to save boxes.



Label the containers. The more specific the labels, the easier it is to find things and keep supplies orderly.

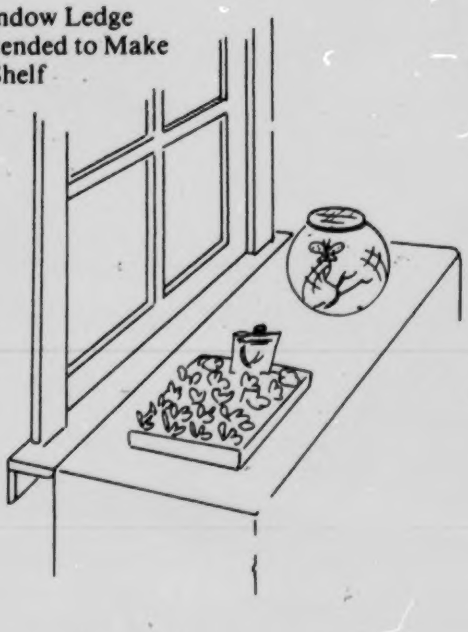
Tools should be hung, when possible, in a closet or cupboard. An outline or silhouette of each tool might be drawn on the hanging board and labeled so that children can put tools away without help and the teacher can see at a glance if something is missing.

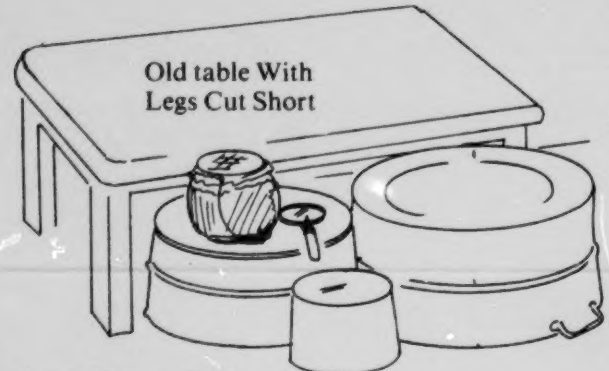


Science Equipment

Whatever is used must be low and isolated enough so children can see, examine, and experiment without interruption. Grouping will depend on the available space, the types of projects, and resources used. Equipment and arrangement will change as interests change.

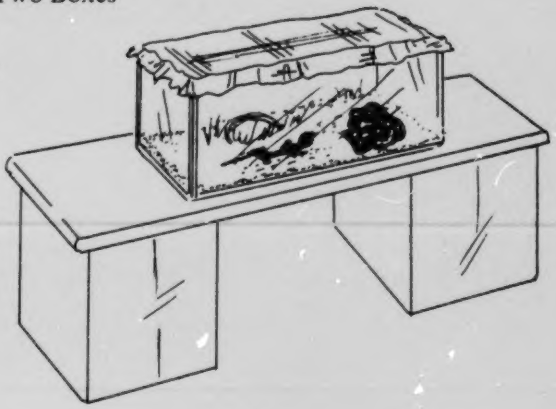
Window Ledge
Extended to Make
A Shelf

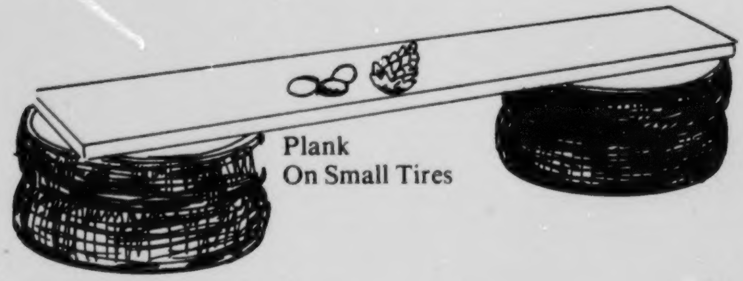



Old table With Legs Cut Short

Large Cans or Tub Turned Upside Down

Board Glued Across Two Boxes





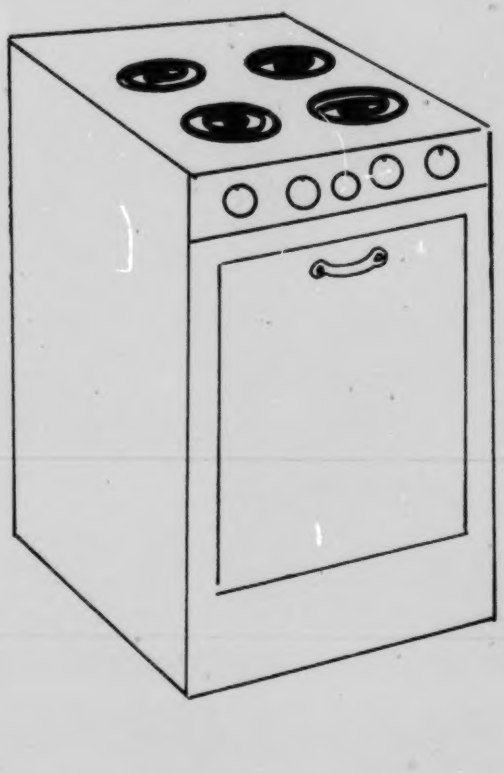
Furniture for the Children

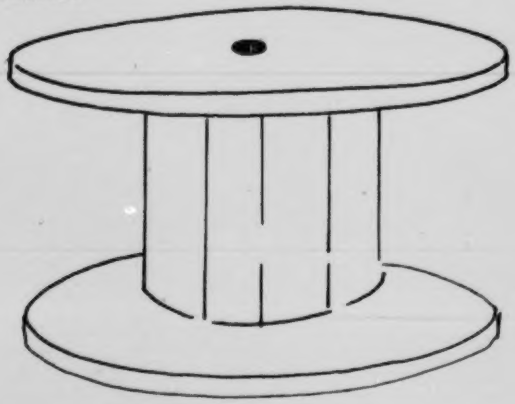
Basic housekeeping equipment includes a table and stove.

For a table, use a cable spool, or a large wooden or cardboard box.

Make a stove from a cardboard or wooden box, or from wood. Draw burners. The four knobs should turn and may be made from half-spools, purchased knobs, or wooden beads. Shelves are optional. Doors should open.

Other kitchen equipment, such as a refrigerator or ironing board, also may be constructed.





Music

Groupings such as those below are especially useful with younger school-agers (under eight years old).

Place 2 apple boxes side by side. Stuff with magazines and turn the open sides to the wall. Cover with a colorful scarf.

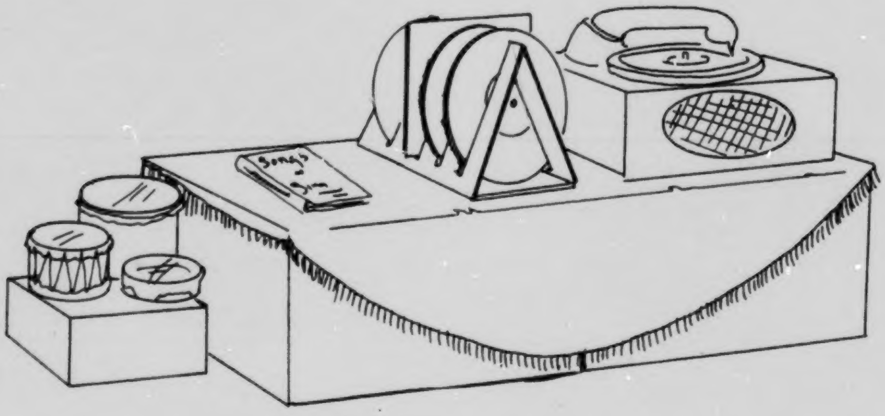
Group drums together on a block.

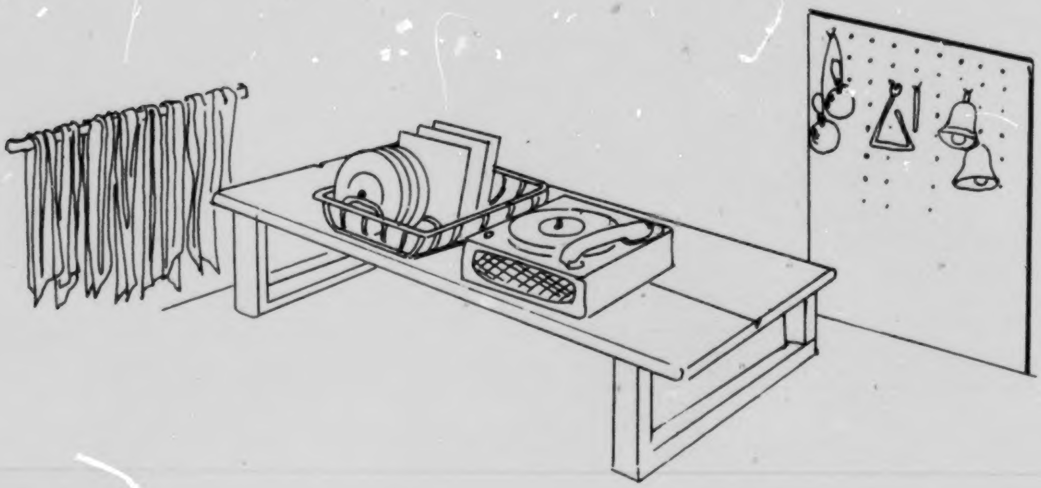
Make a music table from rough planks and cover with butcher paper or other material.

Hang dancing scarves on a towel rack.

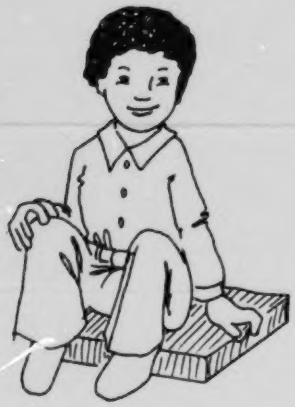
Hang musical instruments on hooks or a peg board.

Items not being used should be taken from the room and stored.



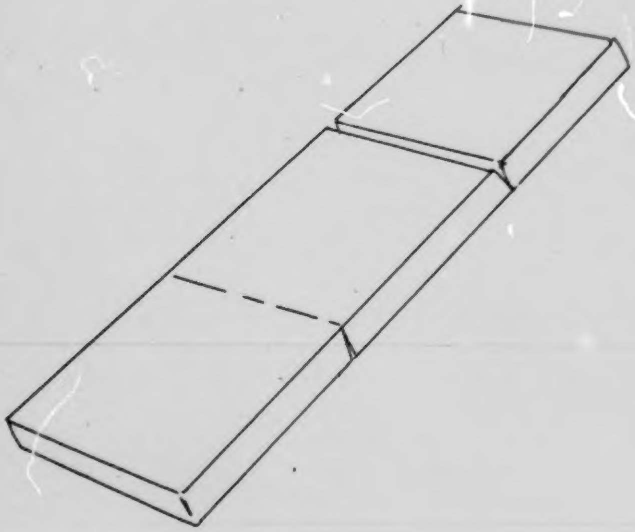


Equipment to Lie or Sit On



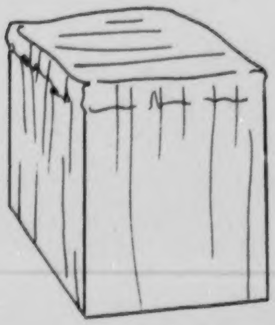
Floor Pads

Fold newspapers or stack magazines together and tape firmly. Cover with fabric, hand sewn in place.



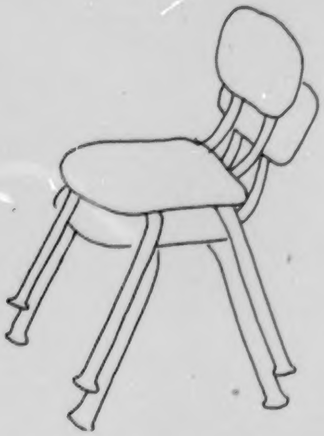
Folding Mattress

Make 3 floor pads and sew together as shown.



Hassocks

The base is a sturdy cardboard carton. (One that contained glass bottles and stiff divider sections would be ideal.) Pad the top. Cut fabric pieces the same size as the sides, top and bottom (with seam allowances added). With right sides together, seam the sides, then add top. Turn right sides out, pull over padded box. Whip bottom in place.



Stack Chairs

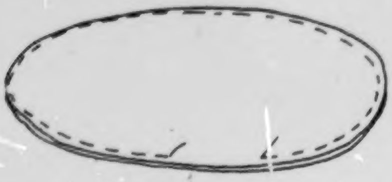
Stack chairs are sturdy, can be used in play, and are convenient to store.

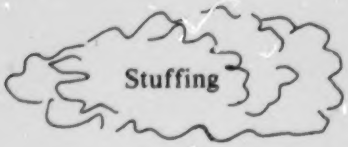
Pillows

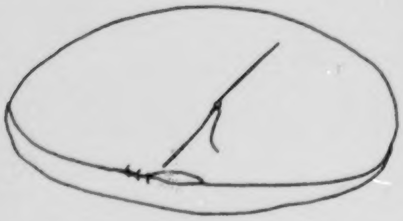
Pillows can be made easily, are versatile enough for children to use in many ways, and can be any size or shape.

Materials:
- fabric for cover (strong, washable, colorful)
- washable stuffing (fabric scraps, discarded stockings, towels, or blankets)
- heavy duty thread for seams

Make a simple pillow cover by sewing together identically shaped pieces of fabric around the edge (inside out). Leave a 3-or 4-inch opening for stuffing. Turn right sides out. Whip the opening closed when stuffing is in place. This is called a "knife edge pillow."



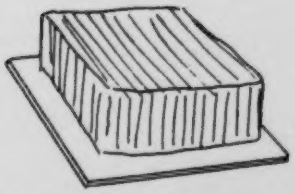




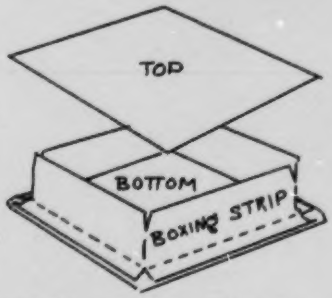
To make floor cushions stuffed with folded towels or blankets, a "boxed" cover fits better.

1. Cut top and bottom cover-pieces ¾ inches larger than stuffing all around for seam.

2. The strip that joins the top and bottom pieces, forming the sides, is called the "boxing strip." Cut it to fit around 4 sides of stuffing with a ¾-inch seam added all around top and bottom.



Clip seam allowance to turn corner. Sew top same as bottom.



Seam together as shown. Leave seam along one side open to insert stuffing. Turn right side out, finish opening.

3. Outdoor Environment

Many children in school age day care have been inside most of the day, so outdoor activities should be a priority. Outdoor play areas can vary, but activities should be planned carefully.

Use of Space

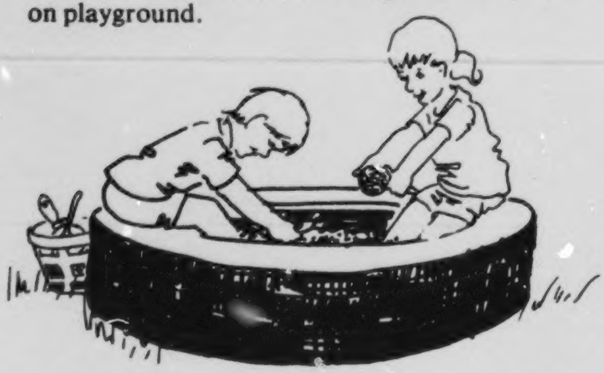
The playground need not be flat, level, or hard-surfaced. Hills, grass, and sand or loose dirt with bushes and trees are desirable. Plan play areas around slopes and bushes. Keep equipment out of low areas that don't drain well.

Large, store-bought playground equipment is nice but not essential. Equipment can be made with inexpensive or free materials, ingenuity, some scrounging, and maybe volunteer help for construction. Include the children in the planning and constructing — that's the fun part!

Remember, nearly any indoor activity also can be outdoors.

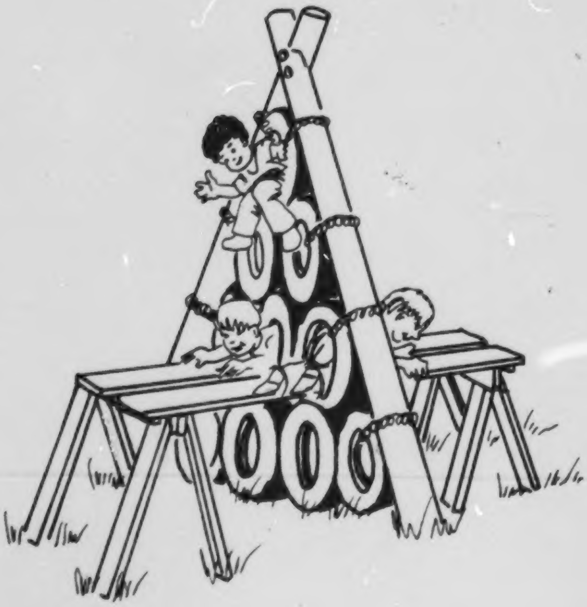
Tires and Tubes

Old tires are free and can be put to many uses on playground.

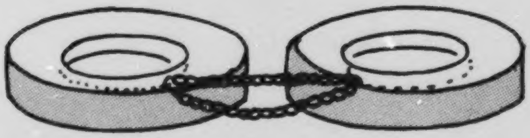


Fill large tractor tires with sand to make a sandbox, or with dirt to plant a garden.

Automobile tires can be loose for children to roll or be part of an obstacle course.

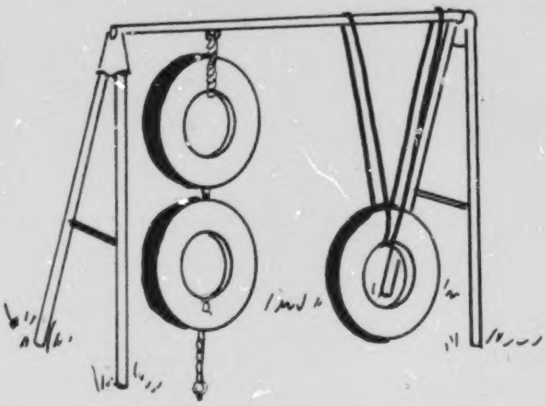


Cut holes in tires so they'll drain. Tires should be well supported because they tend to sag from their weight. When building with tires, use chains to fasten them together. If chains aren't available, use ropes or bolts.

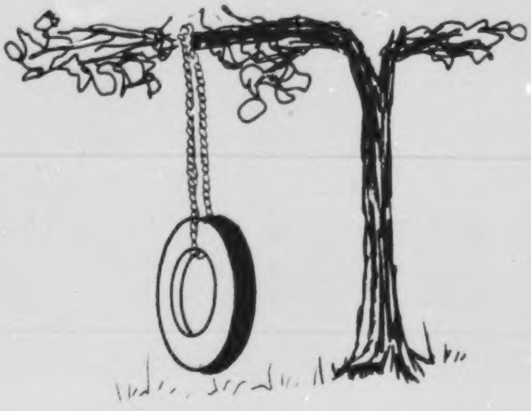


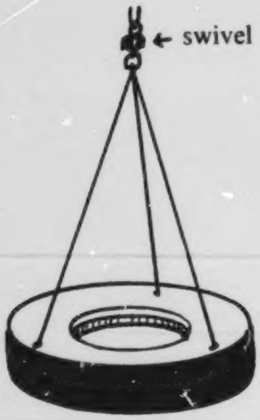
Fasteners (such as chain in illustration) should be out of the way of the children.

Tires can be hung from a support such as an old swing-set frame to make a swing or climbing structure. When hung for climbing, tires should be anchored at the bottom so they won't swing.



Tree limbs offer support for swinging.





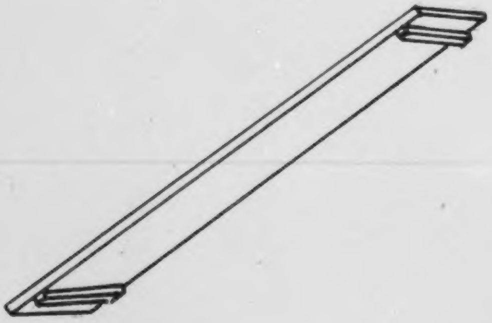
Tires make swivel swings upon which a few children can swing together. Swivel swings move circularly rather than back and forth.

Eyebolts must be checked regularly because they wear out quickly. Heavy-duty, tempered steel bearings should be used on a swivel swing; others wear out too quickly to be safe.

Planks, Sawhorses, and Boxes

Planks and sawhorses are inexpensive and can be made by children to serve as climbing structures and slides.

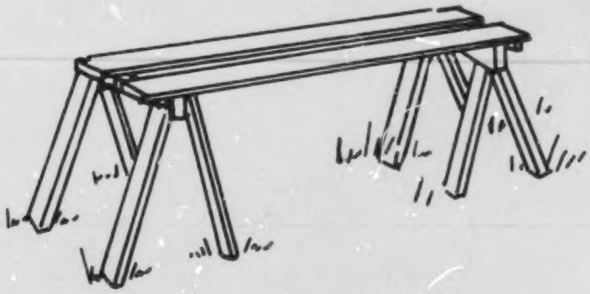
Boards With Cleats

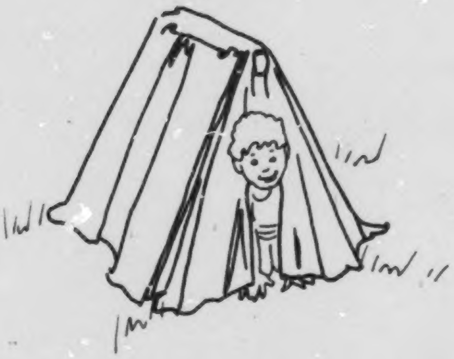


Size: Boards: 1 inch by 10 inches by 8 feet
Cleats: 1 inch by 2 inches by 10 inches
Fasten with screws, 2 inches from end.

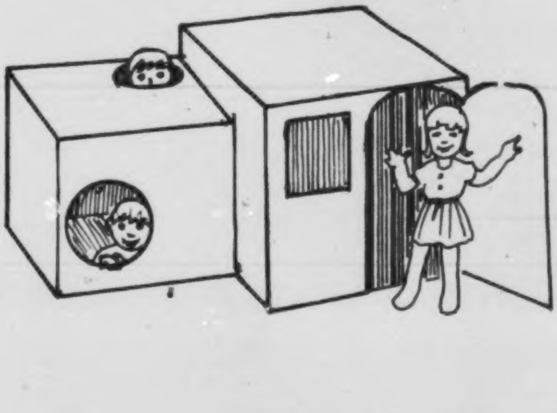
Boards with cleats can be used as ramps, balancing boards, bouncing boards, etc.

Build sawhorses a size that's right for the children. Children can use them with cleated boards to make aerial walkways, or with a blanket to make a hideout.



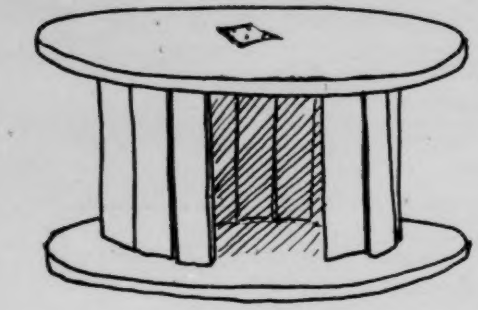


Wooden and cardboard boxes of all sizes also are useful. Large refrigerator or piano boxes are best, but hard to find. They may be painted, used as playhouses, bulletin boards, etc.



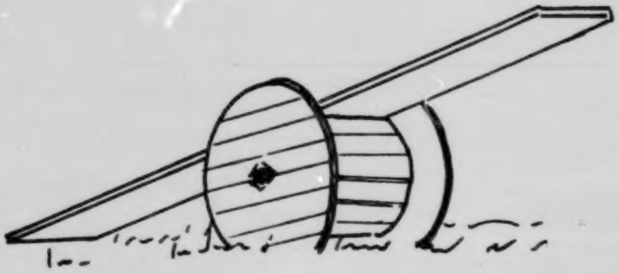
Cable Spools

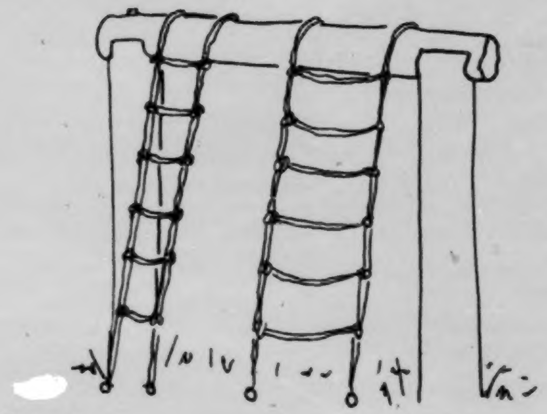
Get cable spools from the telephone company. Sand them. They can be used individually as tables and chairs, or bolted together to make climbing structures.



To make private "houses," remove planks from the middle to make an opening.

Spools also can be used as movable see-saws.

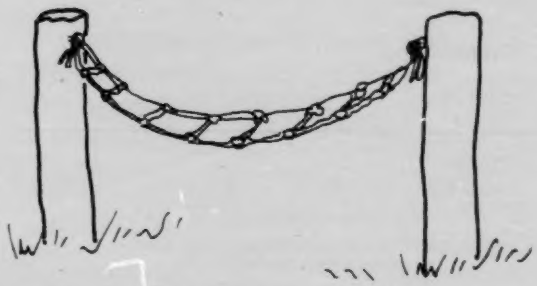




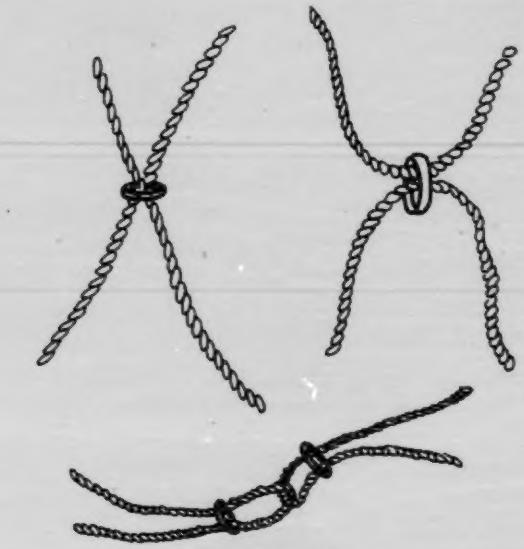
Ropes

Use ropes to lash things together or to make ladders, nets, bridges, or climbing structures.

Hang rope ladders from a frame for climbing, or from posts to make a hammock.



Using Metal Rings to Connect Ropes



Wood Platforms, Treehouses, and Frames

Children find many uses for climbing platforms. Built of telephone poles, 4 by 4's, or 2 by 4's and planks, they can be any level, shape, or size.

Add slides, ladders, and steps for entry and exit.

Cardboard boxes and small toys such as dolls or toy cars make good props.

Surface Coverings

Large pieces of equipment should sit in cement with the top of the cement below the surface of the dirt. When possible, a bed of sand 24 inches to 36 inches deep should be used under all large play equipment for safety. Sand is softer than hard-packed dirt, gravel, or black-top. Safer surfaces are more expensive and harder to maintain, but worthwhile.

Sand and Water

Sand is fun to feel. Add water and mold sand or mud into shapes. Float sticks or boats in a tub of water. And in the summer, children like to play in sprinklers.

Cars and Boats

A junked car or boat frame, or any large vehicle frame provides opportunity for many kinds of play. When preparing an old vehicle for a playground, remove soft, breakable, and movable parts (upholstered seats, tires, glass, doors, etc). Sand rough spots and paint the frame to help it resist rust and weathering. Leave the steering wheel and add a seat — an old box will do. Children will spend many hours climbing and playing with this inexpensive equipment.

Shade and Privacy

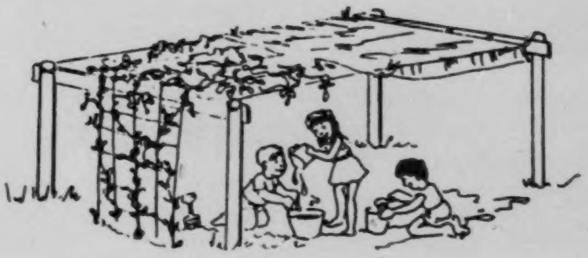
Shade is important during the hot summer months and children enjoy a hide-out anytime. Plan with the children so that shading structures are open to the breeze and have good ventilation.

Materials:
- four 8-foot cedar posts
- two 8-foot 2 × 4's
- 72 feet of clothesline or wire
- 10 screw eyes (to hold line)
- 2 double bed-size sheets or other cloth
- 4 large bolts with nuts, to hold 2 × 4's in place

Permanent Canopy

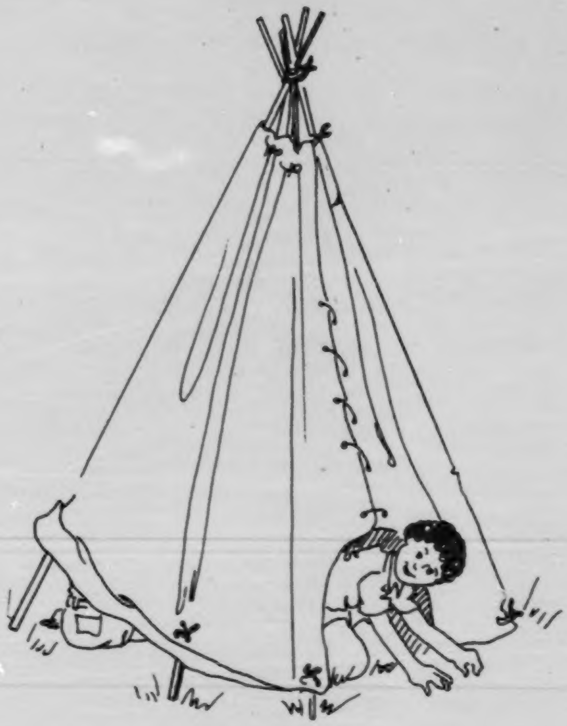
Directions:

Dig holes and set posts. Insert screw eyes in 2 × 4's about 2 feet apart. Bolt 2 × 4's in place at the top of the posts. Thread line or wire through the screw eyes.



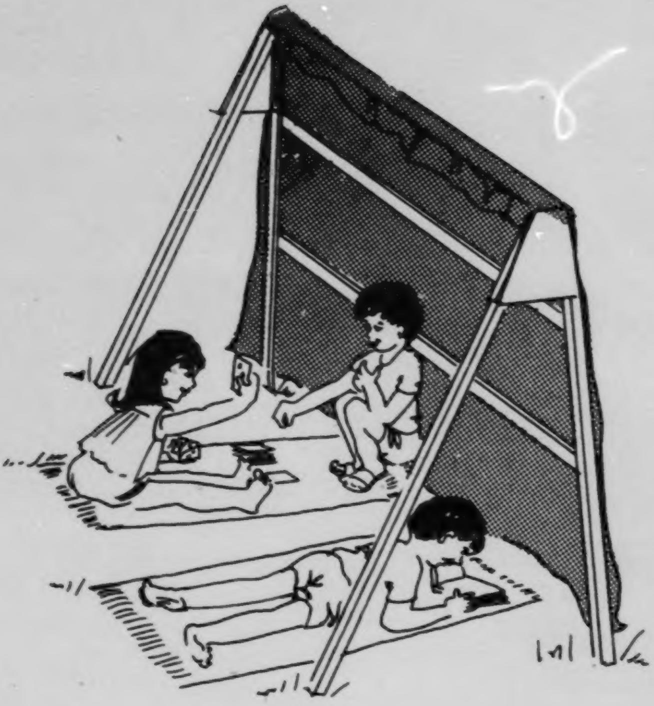
Cover the line with cloth, clothespinned in place.

Quick growing vines such as morning glories or gourds, or permanent vines such as honeysuckle, can be grown over the canopy. Use heavy wire or fencing to support the vines.



Lightweight poles, tied together, and a half circle of cloth make a teepee.

Heavier lumber, nailed together into triangles, makes a framework for cloth or heavy plastic.



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DAY CARE for School-agers

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Physical Skills

1. Overview

Physical skills are necessary for expression, discovery, and survival. Their development has a tremendous influence upon the health and well-being of the young child. Because of social changes (e.g. television, working mothers, apartment life styles), responsibility for children's physical development falls largely upon schools and day care centers.

Opportunity for Success:

Skills develop best when activities are challenging but possible. If tasks are possible, a child comes to feel the pleasure of accomplishment. Otherwise, a child will learn failure and embarrassment. Often a child has a different concept of success than an adult. Children may feel successful "rolling over" if they feel the floor on their backs and see the ceiling. The sensation, in fact, is the important aspect of the movement. Don't be too quick to say "no, you should come up on your feet." The adult will know when the child feels successful by the child's smile and eagerness to try again. Learn to know when to compliment, and don't worry about imperfection.

Changing Challenges:

To keep a task challenging, each new task should be slightly more difficult than what came before, but should be within the child's capacity. Children will learn to welcome new challenges.

Adults also will benefit because children who are succeeding are well-disciplined and cooperative.

2. Gymnastics

Gymnastics are popular with children. Most adults with no gymnastic experience think these activities are difficult and that it's necessary to be a specialist in order to teach them. Not so. Gymnastics can be broken down into simple movements and taught by anyone.

"Turning Over Forward," from *Developmental Gymnastics* by Garland O'Quinn, is reprinted here. Movements range from easy hopping like a bunny, through intermediate steps, and on to a difficult dive roll. A child should participate at each level long enough to master all variations, but not long enough to become bored. Some will be ready for the next step before others so it's best to work with small groups.

Novice (beginner) levels of other gymnastic activities from *Developmental Gymnastics* also are reprinted in this section.

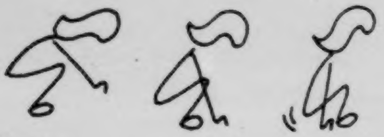
From *Developmental Gymnastics*
by Garland O'Quinn

Turning Over Forward (Novice)

1. Bunny Hop

Description:

Children begin and finish in a squat position on hands and toes. They reach out and take a "hop" by putting both hands further forward and then bringing both feet back up under body.



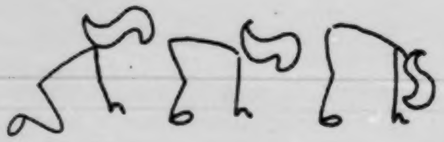
Variations:

Who can hop like a bunny?
Who can hop in a circle?
Who can hop along a path?
Who can hop over a log?
Where else can you hop?

2. Look Behind

Description:

Children begin on hands and knees. Then raise hips over head and tuck chin and head under to look back between the legs.



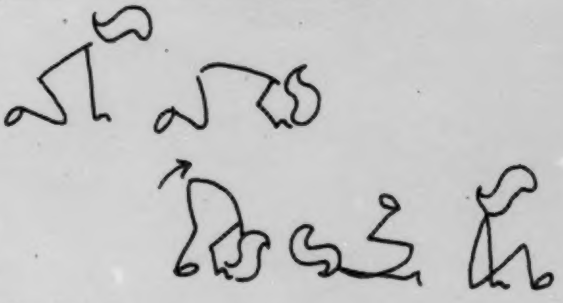
Variations:

Who can look between their legs?
Who can see a friend?
Who can see the wall behind you?
Who can see the ceiling?

3. Tip Over

Description:

Children begin on hands and knees. Then tuck chin under and look for ceiling as they place head on mat. Then raise hips high overhead until they "tip over and roll onto back." Finish in sitting position.



Variations:

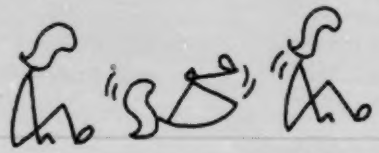
Who can grab their knees?
Who can reach up with the feet while resting on the back?
Who can touch the floor behind them?

Turning Over Forward (Intermediate)

4. Back Rocker

Description:

Begin sitting with mat behind. Rock backward pulling knees and feet overhead. Then allow feet to drop and rock back up to sitting position.



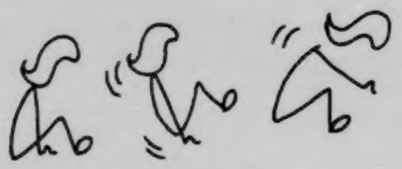
Variations:

Who can see the ceiling before they tip over?
Who can sit up straight?
Who can grab their knees?

5. Seat Lifter

Description:

Begin sitting with mat behind. Rock back and upon rocking forward lean head out over feet and lift seat off the mat.



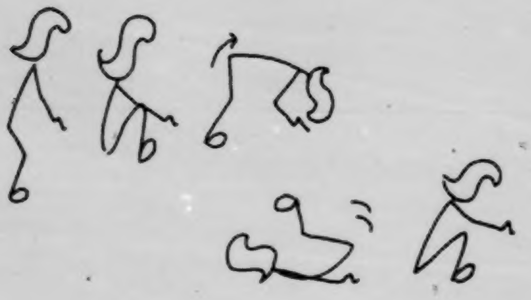
Variations:

Who can grab their knees?
Who can reach hands and arms forward?
Who can come up on their toes?

6. Forward Roll

Description:

Children begin standing. Then squat down, tip over forward, and continue rolling up onto feet and back to standing.



Variations:

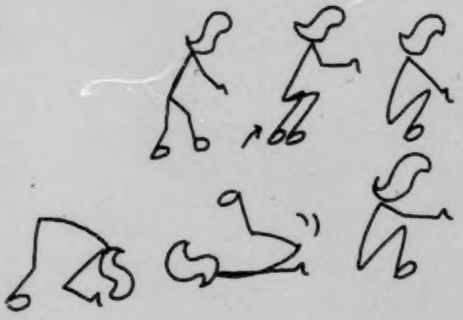
Can you reach forward coming up?
Can you grab your knees coming up?
Can you roll faster?
Can you roll slower?

Turning Over Forward (Advanced)

7. Step-Jump-Roll

Description:

Children begin two paces from a mat. Then take one step and jump to both feet standing just by the mat. Then squat and execute forward roll.



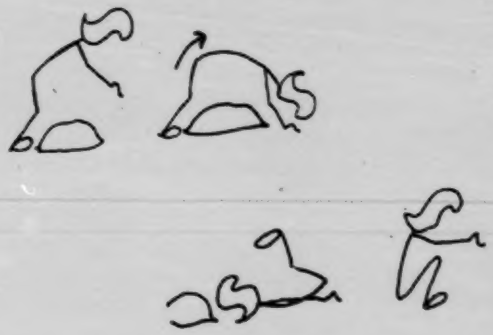
Variations:

Can you grab your knees coming up?
Can you reach forward coming up?
Can you come up with feet side by side?
Can you come up with one foot forward of the other?

8. Reach-Over-Roll

Description:

Children stand with a low obstacle between them and the mat. (Obstacle can be another child or some soft object but *should be about ⅔ as high as the knees).* Then bend over, reach over the obstacle, and execute a forward roll.



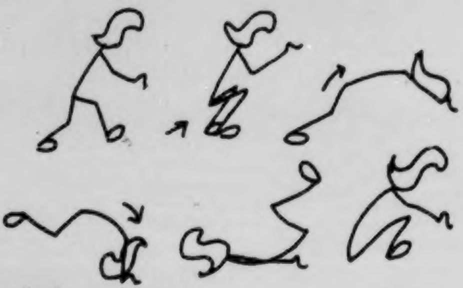
Variations

Can you raise one foot up before your hands touch?
Can you raise the other foot up before your hands touch?
Do you have a variation of your own?

9. Dive-Roll

Description:

Children begin two paces from a mat. Then take one step, a short jump, and after landing on both feet execute a dive roll. The dive roll is similar to the forward roll except that the feet leave the floor before the hands touch.



Variations:

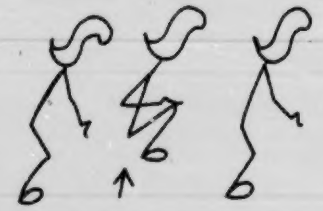
Can you dive over a rope lying by the mat?
Can you dive over a rope held half as high as your knee?
Can you dive over a rope held as high as your knee?

Upright Agility (Novice)

1. Knee-Slapper

Description:

Children jump upward into the air and quickly bring their knees upward and slap the leg near the knee with the hands.



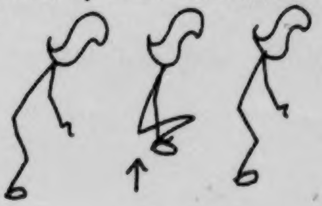
Variations:

Can you slap both knees at the same time?
Can you slap one and then the other before the first foot comes down?
Can you slap your knees and then land facing one side?
What else can you do while doing the knee slapper?

2. Ankle-Slapper

Description:

Children leap upward, then quickly bring the legs and feet up so that the hands can touch the ankles.



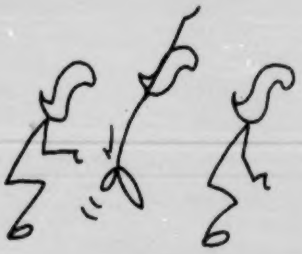
Variations:

Can you slap both ankles at the same time?
Can you slap one and then the other before the first foot comes down?
Can you leap and turn to the side as you slap your ankles?
How can you change the ankle slapper?

3. Seat-Kicker

Description:

Children leap into the air with both arms stretched upward. Then quickly flex the knees so that the heels come up and kick the buttocks.



Variations:

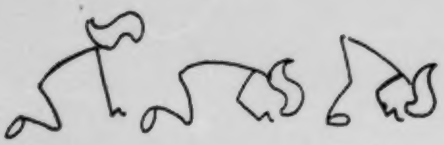
Can you kick your seat with your knees together?
Can you kick your seat with your knees apart?
Can you kick your seat and land facing to the side?
Can you kick your seat and land facing backwards?

Inverted Balance (Novice)

1. Head Balance

Description:

Children start on hands and knees on a mat. Put head down on mat so that hairline touches first. Raise hips up so that knees come off mat. This is a "5" point balance.



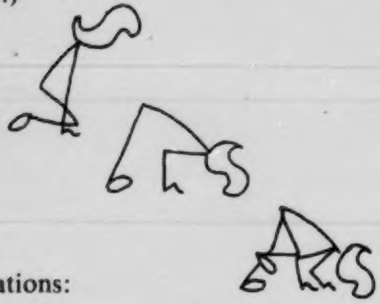
Variations:

Who can raise one hand off the mat?
Who can raise both hands off the mat?
Who can raise one hand and one foot?
Can you use the opposite hand and foot?

2. Hello Elbow

Description:

Children start on the knees, sitting on the heels with the hands alongside the knees. Do not move hands from this place on mat. Then bend forward and place hairline of head on mat and raise hips up so that legs are straight. Balance on "4" points and put one knee on top of elbow. (The elbows sometimes fall outward and are unstable. Stability is improved by pressing inward.)



Variations:

Can you put the other knee on the other elbow?
While one knee is on the elbow, can you tap the other toe?
Let your knees take turns climbing up on the elbows.

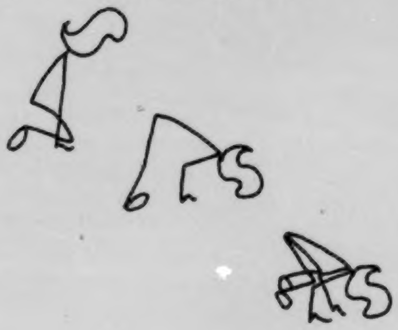
3. Tri Pod

Description:

Children begin as in Hello Elbow. After one knee is placed on the elbow, it is held there while the other knee is raised to the other elbow.

Variations:

Can you stay balanced in a tripod until I count 3?
Can you stay balanced until I count to 6? 10?
Can you clap your feet together?

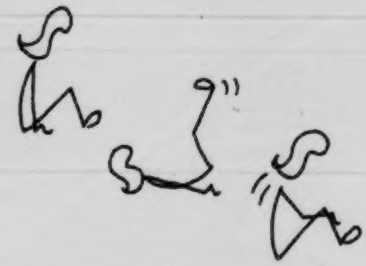


Turning Over Backward (Novice)

1. Back Rocker

Description:

Children sit with mat behind them, hands beside hips, knees bent. Then lean back and raise legs up overhead. Allow legs to fall back down and rock back up to sitting position.



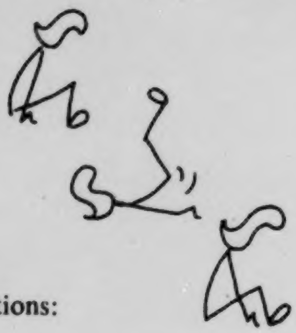
Variations:

Can you hold your knees while your rock?
Can you hold your arms outward?
Can your hold your hands behind your head?

2. Back Balance

Description:

Sit with knees bent and hands on mat. Rock back, raise legs over head and balance there.



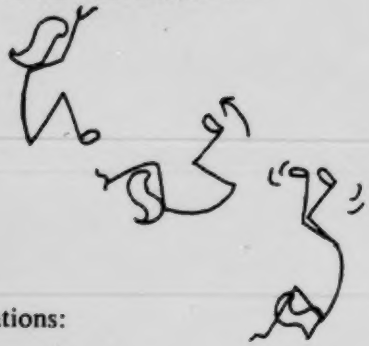
Variations:

Can you hold until I count 10?
Can you bend one knee? The other knee? Switch knees?
Can you touch one knee to the shoulder? The other knee?

3. Shoulder Balance

Description:

Sit with knees bent. Raise elbows up and turn palms of the hands toward the ceiling. Hold elbows high as you rock back and balance on shoulders. The palms of the hands should be flat on the mat with thumbs to the inside. In the shoulder balance, weight is shifted from the back toward the shoulders.



Variations:

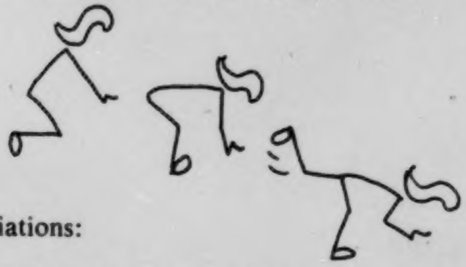
Can you hold the balance until I count to 10?
Can you bend one knee? The other? Switch knees?
Can you touch one toe to the mat behind you? The other toe?
Can you stretch your legs up toward the ceiling?

Inverted Agility (Novice)

1. Leg Lifter

Description:

Children begin on hands and knees. Then raise hips and knees off the mat. From this "all fours" position raise one leg up behind.



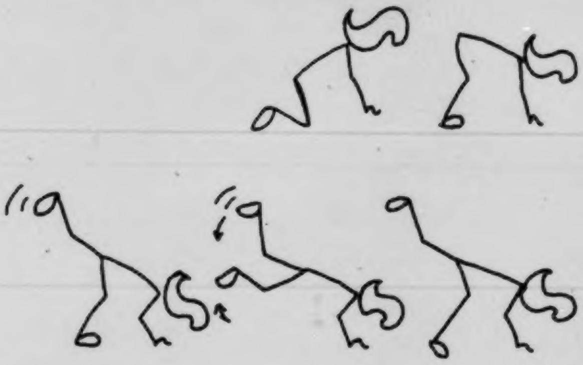
Variations:

While holding one leg up, can you hop around like a dog with a splinter in his foot?
How high can you kick the free leg?
Can you kick the free leg so high that the other foot comes off the mat?
Can you use the other leg?

2. Leg Switch

Description:

Begin on all fours as with leg lifter. Lift one leg up behind. Then kick the free leg up high and quickly switch legs so that the other leg is up and the first leg is down.



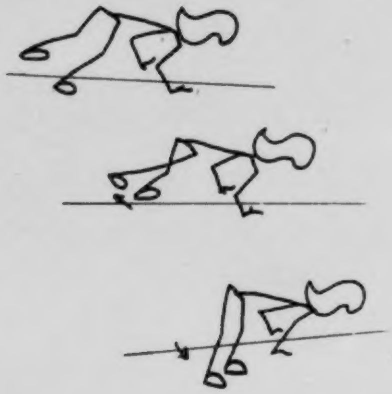
Variations:

How high can you go?
How fast can you switch?
Can you kick from side to side?

3. Straddle Turn

Description:

Begin on all fours straddling a line on the floor or mat. Spread the feet to a moderately wide position. Then lift one leg and cross it above and behind the supporting leg. Now, kick the free leg up and over the line to its starting position as the supporting leg switches to become the free leg.



Variations:

Can you do it four times in a row?
How wide can you straddle?
How high can you kick?
Do you turn to face the side?

3. Other Motor Skills (Novice)

Various games and sports are good for developing the following:

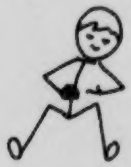
- basic locomotor skills (muscles)
- fine motor skills (agility)
- eye-hand coordination
- the ability to change direction, speed and manner of movement
- flexibility
- balance
- posture
- rhythm
- awareness of body parts
- concepts (color, length, shape, number, location)

Ball Skills

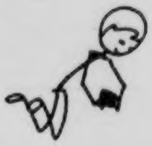
Bean Bags

Each child has one bean bag.

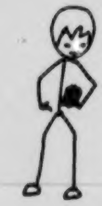
1. Sitting on floor — eyes on bean bag
   a. hold bean bag above head
   b. hold bean bag down by side
   c. hold under knees
   d. move bean bag from hand to hand
   e. bounce it gently up and down in cupped hands
   f. spread legs and slide bean bag from hand to hand on floor
   g. toss from hand to hand



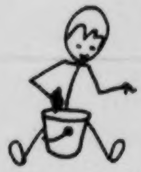
2. On knees — repeat 1.



3. Standing
   a. repeat 1, omit f
   b. toss bean bag up and catch it, trying to stay in same place



Each child has bean bag and bucket (eyes on bucket).

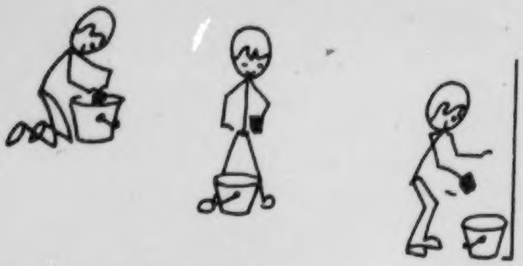


1. Sitting on floor — bucket in front
   a. place bean bag in bucket
   b. place bean bag outside bucket
   c. hold bean bag higher up over bucket, then drop into bucket

2. On knees — repeat 1. a-d

3. Standing close to bucket — repeat 1. a-d

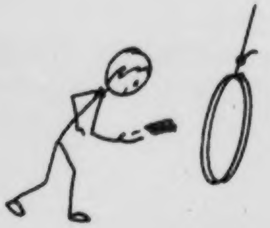
4. Standing, bucket up against wall
   a. toss bean bag into one-foot bucket
   b. toss bean bag into two-foot bucket
   c. using wall as backboard, throw bean bag against wall so that it falls into bucket



5. Standing buckets on chairs — repeat 4. a-c

Use wall targets and bean bags, one target per five children. Focus eyes on target. Stand X number of feet from target. Toss bean bag underhanded.

Use hoops, tires, and bean bags.



1. Standing X number of feet away — toss bean bag through

2. Running — toss bean bag through hoop while passing it

3. Skipping — same as 2

4. Sliding — same as 2

Paper Wads

Same as bean bag procedure.

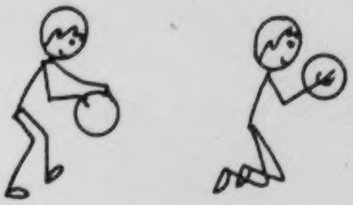
Old Socks

Same as bean bag procedure.

Balls

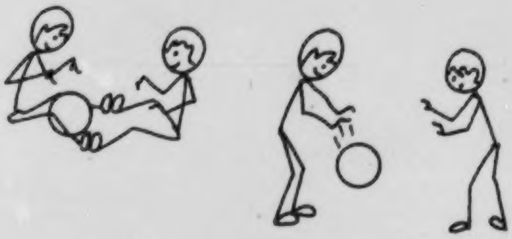
Each child has ball.

1. Same as bean bag procedure



2. Bouncing
   a. on knees
      1. hold ball waist level with both hands — drop it and catch it
      2. hold ball higher up with both hands — drop it and catch it
   b. Standing — repeat a. 1-3

Each child has a partner.



1. Sitting - with feet together - roll ball back and forth between legs
2. Standing
   a. stand close together - hand ball back and forth
   b. spread apart slowly - toss ball underhanded
   c. toss ball with a bounce in middle
   d. toss high up and catch ball

Old Tennis or Raquet Balls

Repeat "Regular Ball" procedure.

Balloons

Sitting, on knees, or standing, child may repeat many bean bag activities, tap the balloon to keep it from touching floor, hold it under the chin, between knees (trying to walk), between arms.

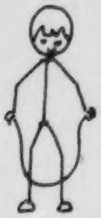
Rope Skills

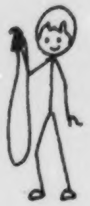
String, yarn, and Chinese jump ropes are used for many of these activities.

Regular Jump Ropes

Invididual rope activities

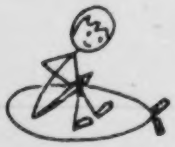
1. Both hands on rope ends
    a. hold up in front
    b. hold down in front, behind
    c. hold above head
    d. hold below knees
    e. hold above knees, below waist, etc.

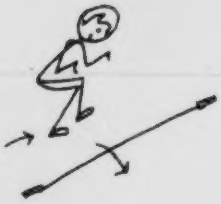




2. One hand - repeat 1, switch hands

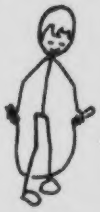
3. On floor - make rope into circle, etc.
    a. jump in and out with both feet
    b. jump in and out with one foot
    c. walk around circle
    d. sit in circle
    e. place various body parts in circle - elbow, knee, nose, etc.





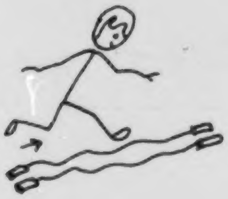
4. Rope in straight line
    a. jump over
    b. balance on like tight rope walker

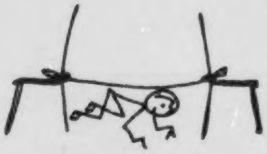
5. Basic jump rope
    a. start with rope in both hands and step back and forth over rope — slowly then faster.
    b. swing rope in complete loop and jump it



Using partners

1. Jump the river (see picture)
2. Repeat 4. a-c
3. Place rope between two chairs about a foot above ground - run and jump over them, crawl under
4. Jumping rope - see variations in "Games" section





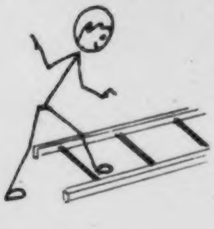
Chinese Jump Ropes

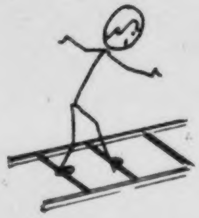
They stretch. It's fun to make strange shapes, as well as to do the regular jump rope gymnastics with these special ropes.

Skills Using Ladders

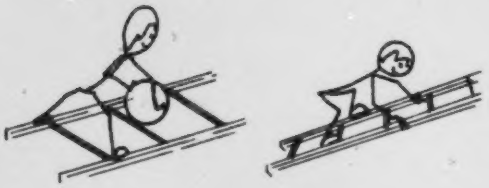
Ladder flat on floor (may be drawn)

1. Walk forward, sideways, the length of ladder, touching between rungs.
2. Perform #1, increasing speed.





3. Walk forward, backward, sideways the length of ladder, placing feet on rungs.
4. Walk on all fours, on toes, balls of feet, knees straight.
5. Hop in every other space using one foot or two.
6. Squat down at end of ladder, put both hands on second rung, jump into first space. Continue to other end.
7. Put large ball between two rungs. Walk on rails, pick up ball, put it between the next two rungs, walk to it and pick it up, etc. Continue to other end of ladder.



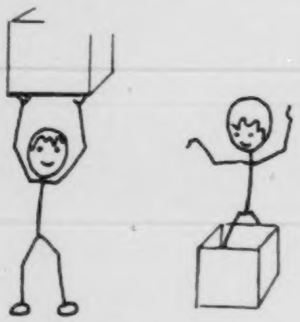
Slightly Raised Ladder

1. Walk forward and backward on all fours.
2. Perform #7 of above.

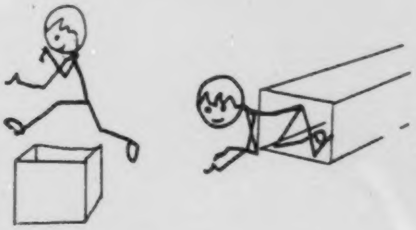
Skills Using Boxes

Have enough boxes for each child. They should be big enough for feet or hands to fit in. Also have a couple of large storage boxes.

1. Walk around box.
2. Hold box above head, below waist, etc.
3. Stand in front of box.
4. Stand behind box.
5. Put body parts (knee, elbow) inside, outside box.



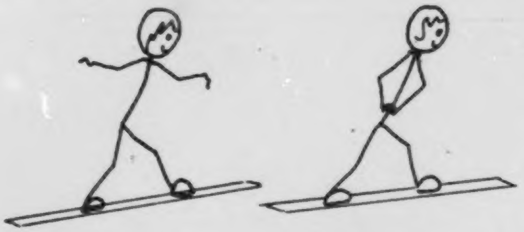
6. With one foot in box,
   a. slide box in front;
   b. drag foot in box behind.
7. With one hand in box, repeat 6.
8. Jump over box.
9. Repeat the above with a partner. Each has the same body part in box (e.g. foot) and they try to move together.
10. Lay large storage box (from furniture store) on floor like tunnel. Children crawl through on stomach, on back, etc.



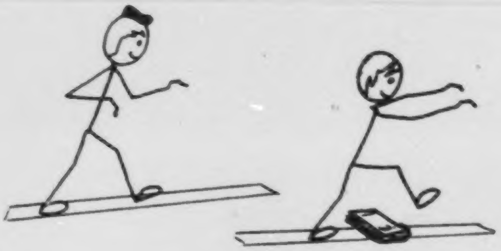
Balance Beam Skills

If beam is unavailable, mark off dimensions of beam (16 inches by 4 inches) on floor with tape.

1. Step on and off beam (forward, backward, sideways).
2. Touch various body parts while on beam.
3. Balance on beam with arms in various positions (folded at chest, raised above head, at hips, etc.)



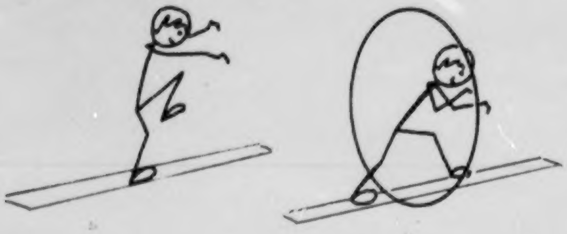
4. Walk on beam (forward, backward, sideward).
5. Walk on balls of feet or on toes, with knees straight, with one foot always in front, then the other, etc.
6. Walk on beam as in #4 with arms in various positions as in #3.
7. Walk on beam as in #4 with bean bag on head, etc.



8. Perform #7, shifting the object from hand to hand.

9. Walk as in #4 to middle of beam, turn and go back to starting point.

10. Walk on beam as in #4, stepping over object (book, eraser, etc.) on beam.



11. Perform #10 with object (yardstick, wand, etc.) raised 12 inches from beam.

12. Walk on beam, pick up object, continue moving forward.

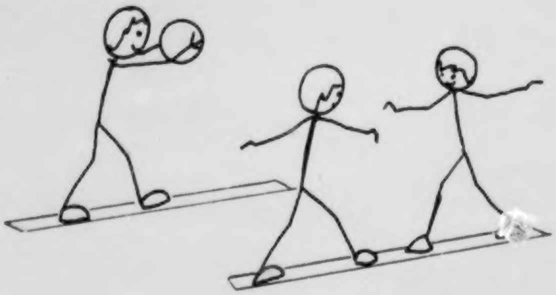
13. Walk on beam, pick up object, turn and go back to starting point.

14. Walk to middle of beam as in #4 and balance on one foot, then the other, with arms in various positions as in #3.

15. Walk to center of beam as in #4, squat, raise up, continue in same direction.

16. Perform #15 while in squatting position, then turn around and go back.

17. Walk on beam, as in #4, through a hoop or under a rope.



18. Walk on beam and throw object at a wall target or into a bucket (while walking).

19. Catch a ball while on beam.

20. Jump with both feet or one foot and land on beam, keeping balance.

21. Walk on beam as in #4 with eyes closed.

22. Walk on beam as in #4 with various beats.

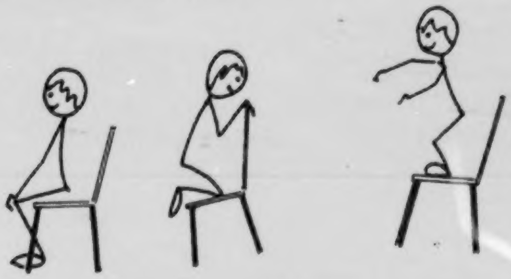
23. Perform scarf activities while on beam.

24. Place a child on each end of beam. They walk to middle and pass each other without falling.

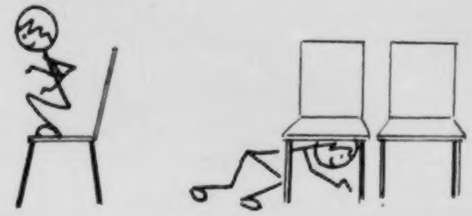
Skills Using Chairs

Back chairs against wall so they won't slip.

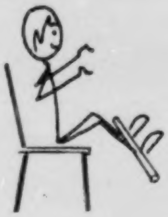
1. Walk forward to chair and sit.
2. Back up and sit.
3. Stand beside chair.



4. Crawl under chair on stomach and back.
5. Squat on knees in chair.
6. Put hands on chair.
7. Stand in chair.
   a. face wall
   b. face right, then left
   c. face forward
8. Jump out of chair.
   a. feet together
   b. far away from chair
   c. swing arms and jump for distance



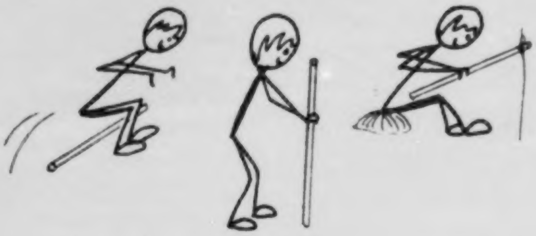
9. Jump high from chair.
   a. repeat #8
   b. jump and slap knees
10. Squat down in chair, spring, jump, and land in various ways.
11. Jump, then turn in air and land facing chair.
12. Place chairs side by side in long line so the children can crawl under them on stomach, back.
13. Put chairs into an obstacle course.



Skills Involving Plastic Tubes

Materials to consider using: golf club containers, toilet paper tubes, rolled paper.

1. Identify color, length, and numbers of tubes used.
2. Touch various body parts with tube.
3. Put tube horizontally on floor, then roll it back and forth with hands or feet.
4. Balance tube horizontally on top of hands or feet while sitting. Let it slide from side to side.



5. Put tube on floor without bending knees.
6. Perform #5. While tube is on floor, put one hand at each end, step over tube with one leg, then the other, then step back to starting position.
7. Perform #5, then jump over, around tube.
8. Balance tube vertically on floor or in hands.
9. Set tube vertically on floor and blow on it.
10. Copy moves of partner or teacher.
11. Tap tube on floor in front, back, side, around.
12. Perform #11 to various rhythms, loudnesses.
13. Repeat any of above activities with music.
14. Use tubes for role playing (as a fishing pole, as a balancing pole for a tight rope walker, etc.).

Bibliography

O'Quinn, Garland. *Developmental Gymnastics.* Austin, Tex.: The University of Texas Press, to be published in late 1977.

DAY CARE
for School-agers

PS 010257

F. Fun With Food

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Fun With Food

1. Overview

Goals

Eating habits which build good health must be learned. Learning takes place best when it's fun. How can learning about food be fun?

Children enjoy learning about food when they're involved in its preparation. They'll enjoy learning from each other about foods their families eat. They'll enjoy learning about *new* foods. And many foods may be more enjoyable if prepared or served in a new way: carrots dipped in peanut butter, spinach in raw spinach salad, or artichokes dipped in sauce.

Most children have a concern for food which is ethnic, social, and cultural. A nutritional program should reflect this concern. The program also should depend on the physical needs of the children, the time of day, what they eat elsewhere, and their ages.

These following activities won't increase food costs, since the foods can be eaten as snacks or meals. If foods are in season, their cost will be less than frozen, canned, or packaged foods.

Here are areas which children can learn about through activities with food.

Nutrition

Children can learn that food helps determine growth and health, that some foods are better for them than other foods, and that they need many kinds of food to be strong, look nice, and feel good.

Cleanliness And Safety

These can be taught while handling tools and ingredients.

Mathematics

Math is involved in buying, preparing, and serving food. Cost, measurement, quantities, timing, setting the table — all provide practice with numbers.

Science

The children can learn where food comes from. For example: How does corn grow? What does it need to grow? Where does it grow? Children also can learn how food affects growth and development. And why do certain foods cook certain ways — if a cake falls or a custard runs, what is the reason?

Social Science

Children can learn about teamwork. They can enjoy eating and learning about foods from other countries.

Language

Children's vocabulary will grow as they learn about foods and nutrition. Always use correct terms for food, equipment, and processes. For example, it's proper to "section" grapefruit, "squeeze" lemons, "knead" dough, "sift" flour, and "grate" cheese.

Creativity

Food can be prepared and served creatively. Tastes, colors, textures, and shapes can be dealt with in new ways.

Courtesy

Meals are a good time to learn how courtesy can make things more enjoyable. And how "etiquette" means being thoughtful about others.

Self Sufficiency

Making something that's pretty and good to eat is something to be proud of. It's useful and gives a sense of independence.

Tips For Food Activities

- Be aware of the children's interests and suggestions. Don't insist on anything so much that it seems like a chore.
- Plan and serve nutritious foods rather than junk foods. Teach why snack foods aren't as good for people as nutritious foods.
- Avoid foods with high sugar content.
- Serve foods at room temperature unless cold or heat is necessary to preserve or prepare the food.
- Vary the eating place, the style of dining, and the utensils. For example, have outdoor picnics, oriental style meals on low tables, or cafeteria style dining in the kitchen. Use bowls, cups, and plates which are different colors, shapes, and sizes. (These are cheap at a Goodwill or second-hand store.) Let the children choose their favorites each meal.
- Teach how to use peelers, strainers, colanders, sifters, measuring cups, and rolling pins.
- Creative experiences with natural foods are important. Many children have only eaten food which comes in boxes, bags, bottles, and vending machines.
- Have foods in the room at all times. Children can learn from observing and examining such foods as coconuts, artichokes, and pineapples.
- Visit a garden to see vegetables growing. Plant a garden outside if space permits, or in small planters indoors. Visit a farmer's market and a butchershop, if the children want to go.
- When it's necessary to take turns cooking, have other activities planned for children waiting their turn. They won't mind waiting if they're sure they'll each get a turn.

2. Activities With Food

Planning

Getting Started

Tell the school-agers that there will be many activities concerning food, but don't try to do too much at first. Everyone needs time to get comfortable with each other and with the new place.

Make an area in the room the central location for food activities. Maybe put up a chart showing commonly used utensils. Label them. Gradually add new utensils to the chart.

Put real food in the "foods" area each day for the children to see. Label the food. Possibilities are:

- Pomegranates — At snack time break them open and let the children taste them.
- Sprouting sweet potatoes — Put them in water and explain how they'll grow.
- Carrots and a peeler — Put out a carrot or two for the children to peel. Either eat the peeled carrots or have fresh carrot strips to eat at snack time.
- Onions — There are yellow, white, red, and green onions. Talk about how they're alike and different. Compare odor and appearance.

Once the children begin to get the hang of working with food, activities can become more complicated and varied.

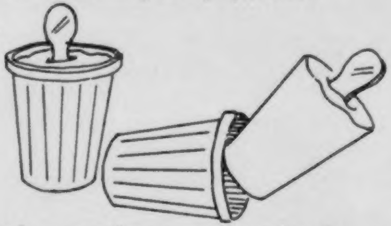
Many activities don't require heat, such as spreading sandwiches, stuffing celery, making lemonade and popsicles.

Here are activities school-agers usually like. There are many more.

- Making lemonade

Use ½lemon. Squeeze with a squeezer into a small container. Leave out the seeds. Add one tablespoon of sugar and ½ cup of water. Stir. Let the children pour it.

- Making fruit juice popsicles.



This is a good way to get school-agers to like fruit juice. Pour the juice into ice cube or muffin tins lined with paper cupcake holders. Put the popsicles in the freezer. Single popsicles may be made by using small paper cups. After the juice is partially frozen, place a small wooden spoon, tongue depresser, or plastic spoon into the middle of each popsicle to use as a handle. Let the juice freeze solidly before removing the popsicles. If the popsicles are too hard to remove, put the tray into warm water for a few seconds and turn it upside down on a sheet of waxed paper.

- Roasting peanuts in the shell

Save a few to compare with the ones that are roasted. Place the ones to be roasted in a shallow pan, one or two layers deep. Roast in the oven at 350 degrees for 25 to 30 minutes. Stir occasionally. During the last 10 minutes, check to see if they're done by shelling and sampling a few. Remember that once peanuts cool, they are slightly more done than when they were removed from the oven.

- Stuffing celery

Show the children a whole celery stalk. Let them cut and string the pieces. Then soften cream cheese with milk and seasoning. Have a cup of cream cheese and a cup of peanut butter with which the children can stuff the celery.

When it's time to eat, there is more to learn: how to keep the cooks' and eating area clean, for instance.

To give children a sense of accomplishment, put a chart on the wall and list the foods they've prepared and eaten. Put a star besides the ones they're especially interested in.

Separate Functions

Separate functions: measure and mix at one table, cook at another, eat at a third. Try to make each part as clear and easy as possible.

Single Serving Recipes

By following a recipe for a single serving, a child gets to do all the preparing and eating. The child may need help in following the recipe precisely. For single-serving recipes, use only a few ingredients to avoid confusion.

Fruit Salad

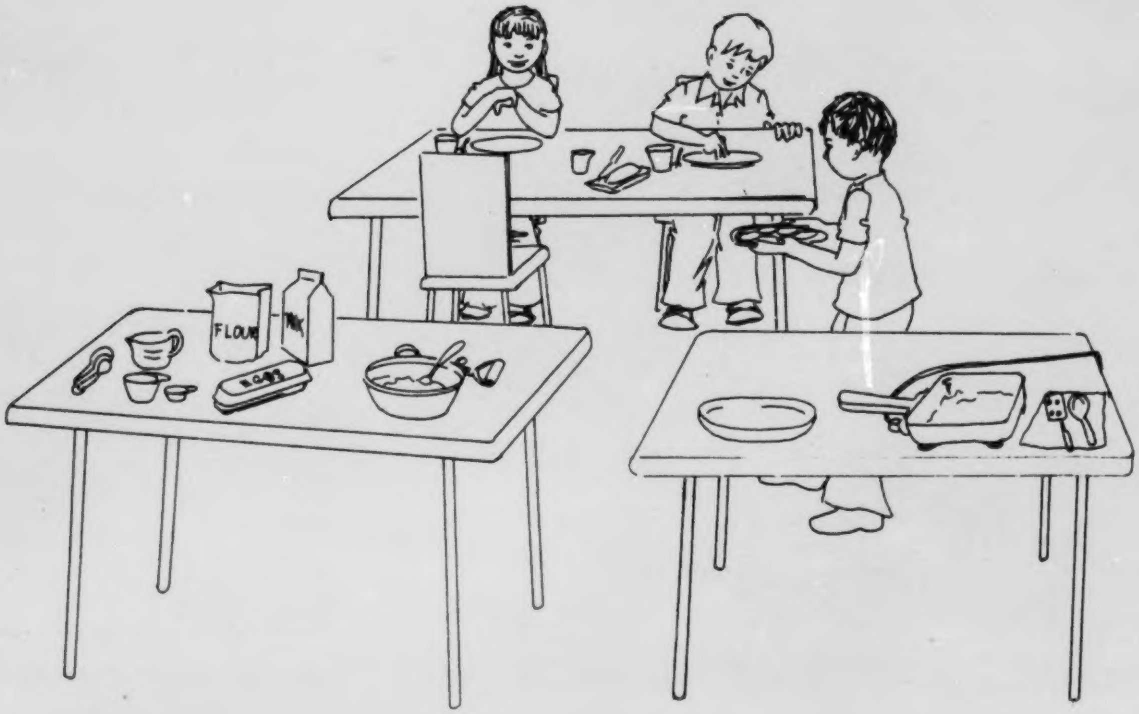
¼ apple; ¼ banana; 2 orange sections; 2 walnut halves; 8 raisins. Cut up the fruit and put it in a cup to eat.

Carrot Salad

1 carrot, peeled and shredded; 8 raisins; a tablespoon or less of mayonnaise if desired. Stir.

Orange Shake

1 cup orange juice; ¼ cup dry milk; 1 drop vanilla. Put into a small jar and shake well. Serve in a glass.



Instant Pudding

1 tablespoon pudding (instant pudding mix powder); ¼ cup milk. Stir until thick in cup or glass.

Chocolate Milk

1 teaspoon powdered cocoa; 2 teaspoons powdered milk; 1/3 cup of water. Stir in a glass.

Group Projects

These are fun too. Keep the group a manageable size even if the recipe has to be repeated several times. Making stew, soup, ice cream, bread, cookies, and beans can involve everyone.

Syrup

Syrup is easier to manage if it's poured into paper cups or clean juice cans instead of a bottle or pitcher. Pureed fruits or apple butter might be used rather than syrup.

Illustrated Recipes

Have large-size illustrated recipes for the children to follow. Using key words, these recipes give children the visual aids they need to become independent and competent. Pictures show the kinds and quantities of materials needed. Following are recipes involving visual aids.

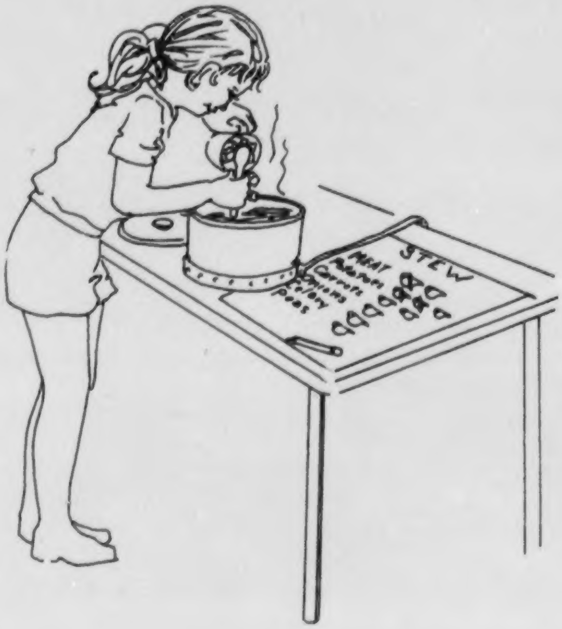
Stew Or Soup

Prepare a display of vegetables to be used. Show a whole, unpeeled vegetable and a peeled and halved vegetable. Label them.

The child chooses a section of one of the vegetables and goes to the cutting table where there is a knife, cutting board, and paper cup to collect the small pieces that are cut. After filling as many cups as desired, put the vegetables into a pot. Make a chart to keep track of what's put into the stew or soup. The child marks the chart when each cup of cut vegetables is added.

Illustrated recipes for apple sauce, peanut butter, and every day cookies follow. Other recipes may be illustrated in a like manner.

(Pages from this guide may be taped to the wall for easy reference while cooking.)



Peanut Butter

INGREDIENTS

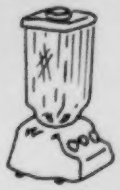
2 cups peanuts, roasted and shelled

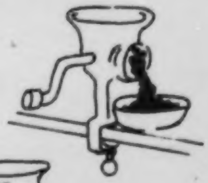
3 tablespoons peanut oil or oleo

¼ teaspoon salt

TOOLS

Electric Blender or Food Grinder with Fine Blade



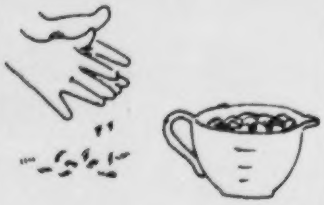


Measuring Cup

Measuring Spoons

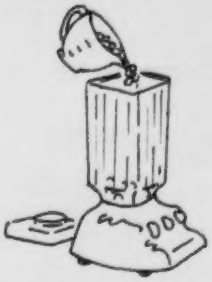
Rubber Scraper

1 Rub loose skins off peanuts



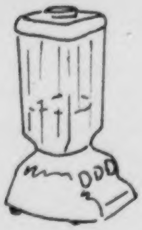
Fill measuring cup.

2 Pour ½ cup peanuts into blender.

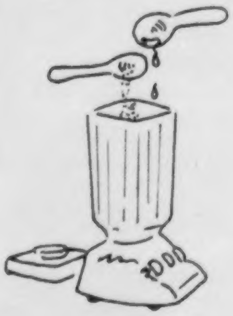


Blend until well ground.

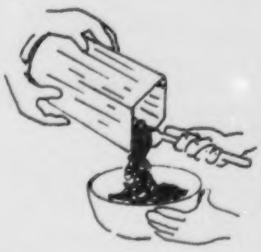
3 Add peanuts, ½ cup at a time until all are ground.



4 Measure and add oil or oleo and salt.

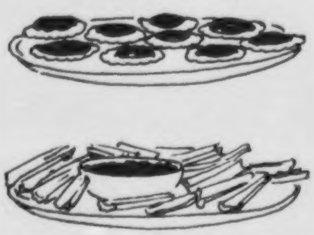


5 Blend until smooth and spreadable.



Use rubber scraper to remove peanut butter from blender.

6 Serve on whole wheat crackers or as a dip with raw celery and carrots.

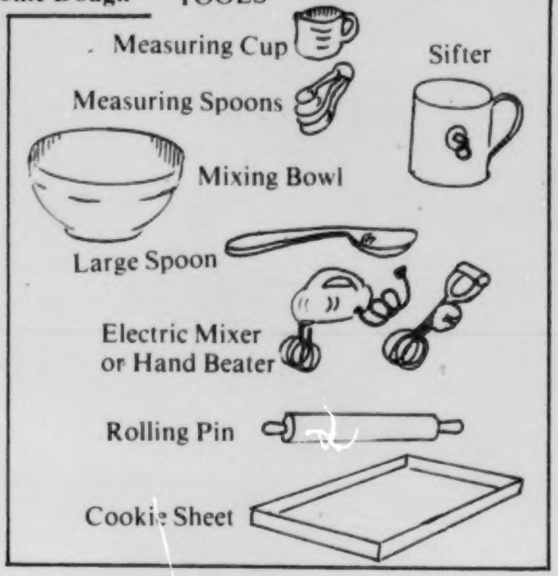


Everyday Cookie Dough

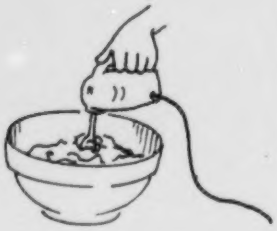
INGREDIENTS

2/3 cup oleo
1 cup sugar
2 eggs
1/4 cup milk
1 teaspoon soda
1 teaspoon vanilla
1/4 teaspoon salt
4 cups flour (unbleached white or whole wheat pastry flour)

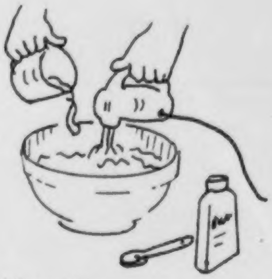
TOOLS


Measuring Cup
Sifter
Measuring Spoons
Mixing Bowl
Large Spoon
Electric Mixer
or Hand Beater
Rolling Pin
Cookie Sheet

1 Mix oleo and sugar until creamy and smooth. Add eggs.

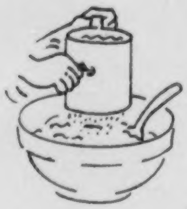


2 Dissolve soda in milk, add to sugar and oleo.



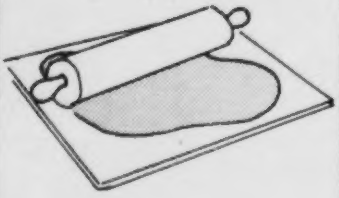
Add vanilla.

3 Mix salt with flour.



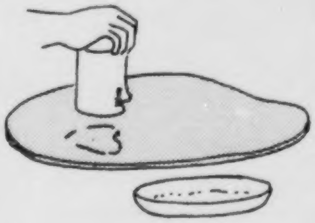
Combine with other ingredients.

4 Chill dough ½ hour.



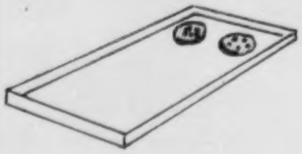
Roll or pat dough flat on floured board or wax paper.

5 Grease cookie sheet.



Cut out cookies after dipping cutter in flour.

6 Place cookies on cookie sheet ½ inch apart. Decorate with raisins, nuts, etc.

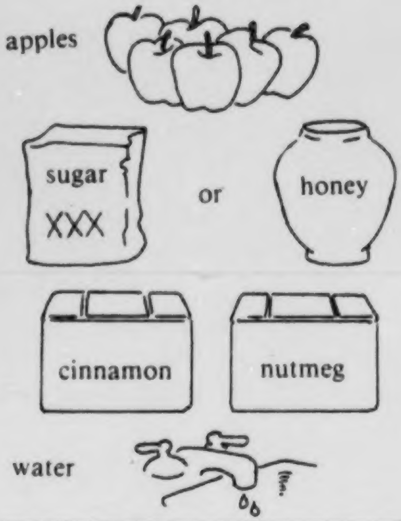


Bake 8 minutes at 350°.

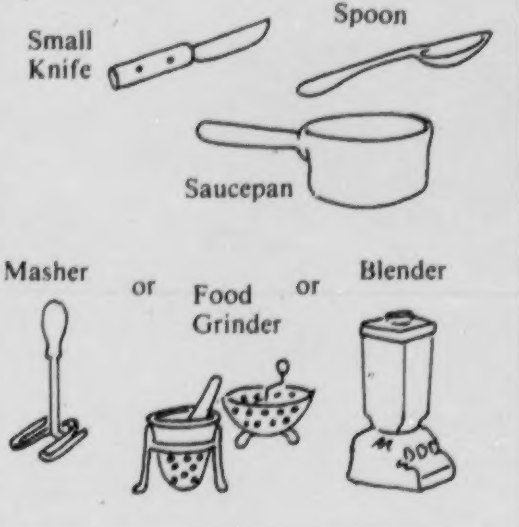
Makes 4 dozen cookies.

Applesauce

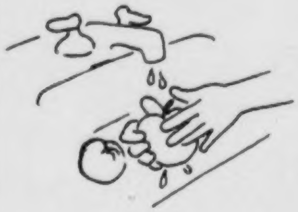
INGREDIENTS


apples
sugar
XXX
or
honey
cinnamon
nutmeg
water

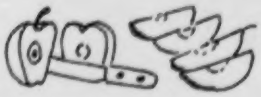
TOOLS


Small Knife
Spoon
Saucepan
Masher
or
Food Grinder
or
Blender

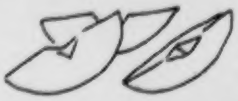
1 Wash the apples.



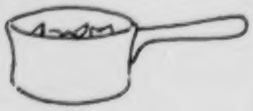
2 Cut each apple into 4 pieces.



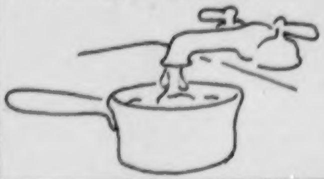
Leave skins.
Remove stem and seeds.



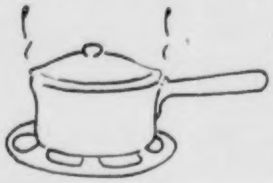
3 Put apples in pan.



Add water until level with top of apples.



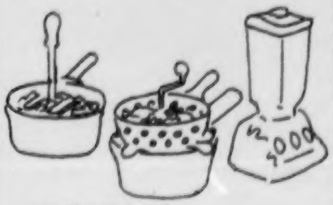
4 Place pan on stove. Heat until water bubbles slowly. Lower heat and cook slowly.



Put lid on pan. Cook until apples are soft.

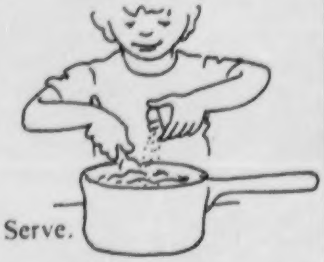
5 Remove pan from stove.

Mash or grind or blend



until smooth.

6 Stir in honey or sugar, cinnamon and nutmeg, a little at a time until sauce tastes right.



Serve.

3. Studies of Specific Foods

Pineapples

Activities concerning pineapples usually are popular and a good way to interest school-agers in fruits and vegetables.

The pineapple is an Hawaiian plant also called a "pine" because it looks like a pine cone. A good, fresh pineapple has a fragrant odor and firm feel, and is heavy for its size. Pineapples ripened in the field are sweet. Those in most stores were picked green and shipped to ripen in the store. They are less sweet.

If the children don't like the taste of fresh pineapple, roll it in powdered sugar.

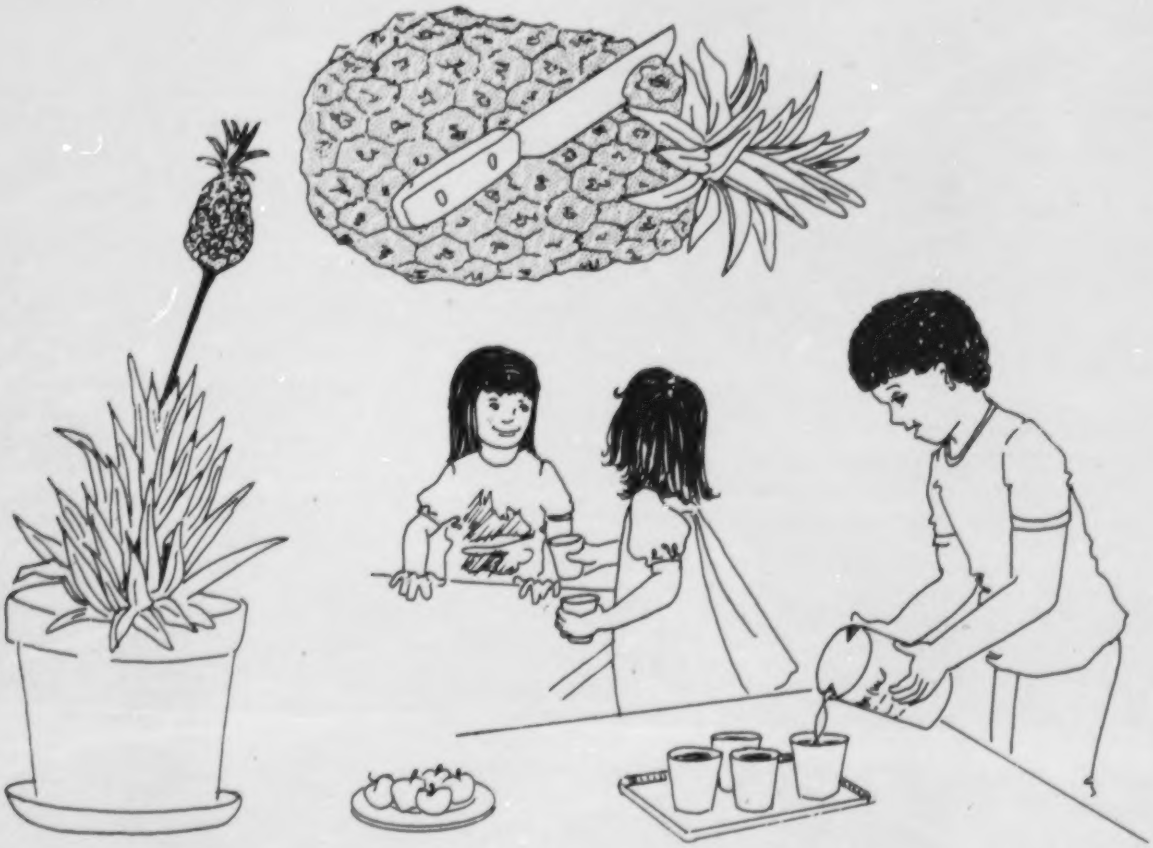
Choose fresh pineapples that are firm and have large green crowns. Place them in a tray. After examining and discussing the rough feel, hard covering, and spiny leaves, cut off the crown with an inch of the fruit attached. Peel and slice what's left.

Dry the crown until the next day, then plant it in damp, coarse sand until roots are formed. The sand should be damp but not soggy. The crown then can be planted in a large pot or outdoors during the summer. If carefully tended, the pineapple will bear fruit.

Along with fresh pineapple, serve food that contains pineapple and see if the children can recognize the flavor. Talk about foods that are made with pineapple. Get the children to notice the different tastes of fresh and canned pineapple. Canned pineapple tastes different because it has been heated to a high temperature in a mixture of sugar and water.

The children should get about four servings of fruits and vegetables each day. Pineapple or pineapple juice can help satisfy this requirement.

Pineapple juice can be served by itself or with other juice. School age children also should have a serving of food rich in Vitamin C each day. Because pineapple does not contain much of this vitamin, choose a brand that has Vitamin C added to it.



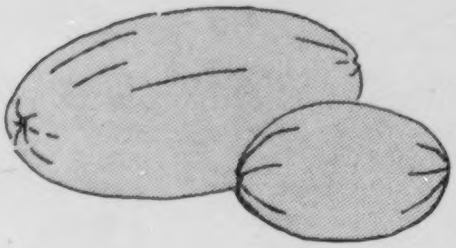
Melons

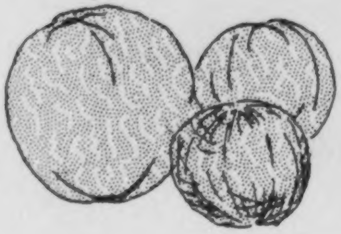
If melons are served as dessert, a snack, or part of a lunch, give the children a chance to learn more about them.

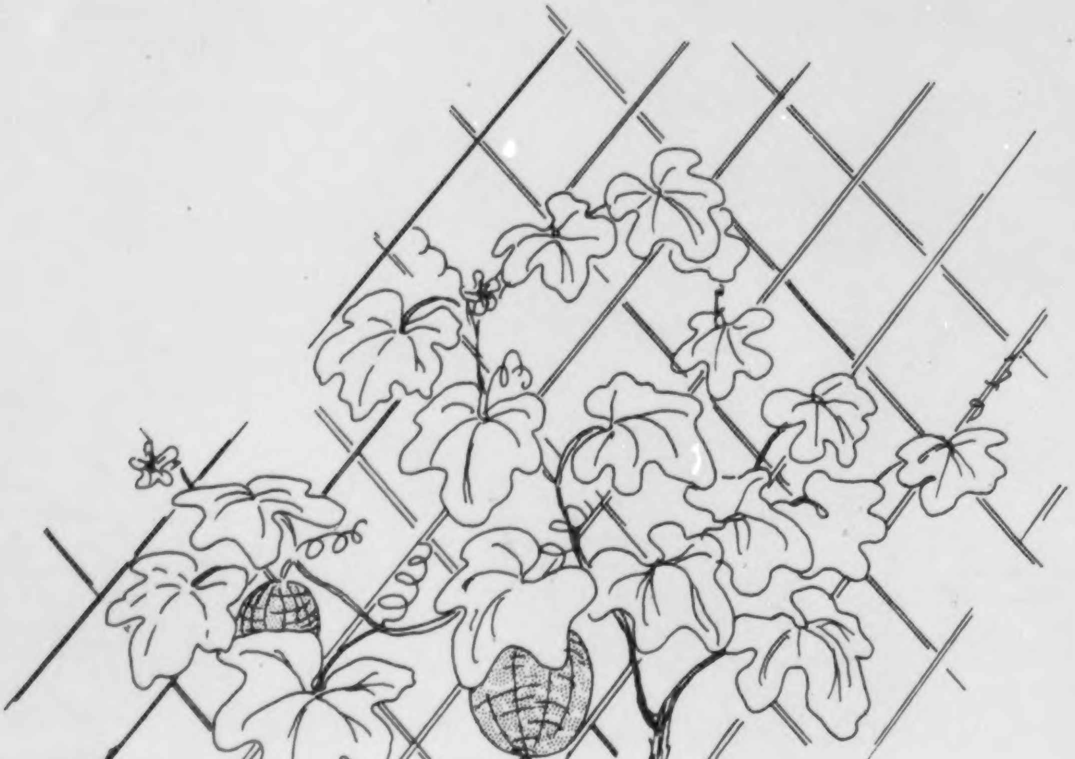
Get different sizes and kinds of melons and put them on trays. Encourage the children to feel and smell them. Compare uncut and cut melons.

It's fun to serve melon balls in rinds from which most of the flesh has been removed. Save the large, firm seeds. The children can rinse them in a colander, spread them on a cardboard tray to dry, and later make jewelry from them.

A trip to a farm to see melons and other vegetables growing might be interesting. Next year the children might grow melons — at least to the stage where they can observe the tendrils, yellow blossoms, and large leaves.





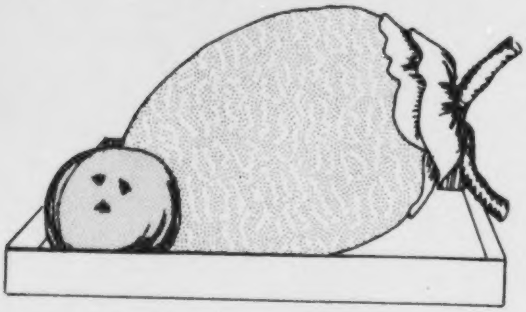


Coconuts

Gather background information about coconuts before planning activities. This might be a good project for several interested school-agers. They could become the coconut "experts" and help plan activities.

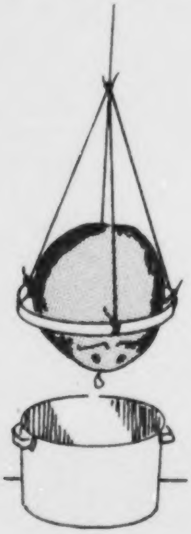
Coconuts are one of the world's largest seeds. They keep well, are easily shipped and stored, and withstand rough treatment. They're available in grocery stores the year round.

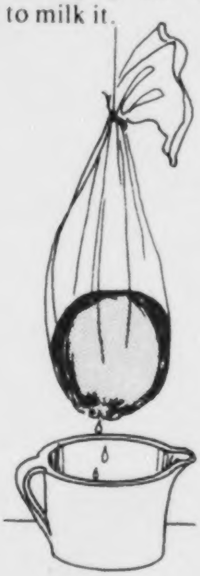
The coconut tree and seed have many important uses. Since coconut palms grow along tropical seacoasts all over the world, they're easy to get. A single palm tree can produce as many as 100 coconuts a year.



Buy at least two coconuts, one with the husk and one without. Place them on a cardboard tray to examine and discuss. Compare their shapes, sizes, textures, and weights. Shake them and listen to their milk slosh. Place them in a pan or tub of water to see the husks float.

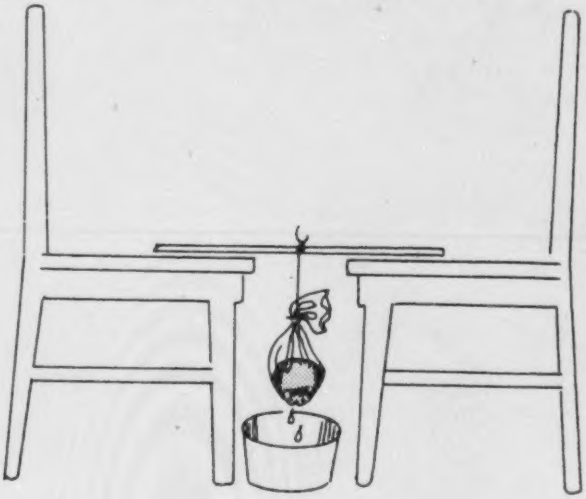
Prepare a device for hanging the coconut when the group is ready to milk it.





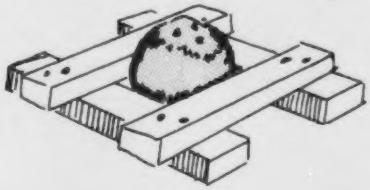
Tie a string on a plastic coffee can lid or use a small plastic bag with a hole in the bottom.

Hang from a stick placed between two chairs.

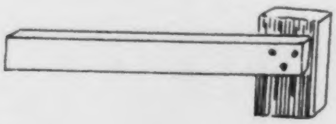


Puncture the coconut's eyes with a clean, large nail and let the milk drain into a pitcher or pan. Each child can catch a few drops of milk in a small paper cup and taste it.

School-agers can make a coconut-cracker by nailing pieces of scrap lumber together to form a trough.

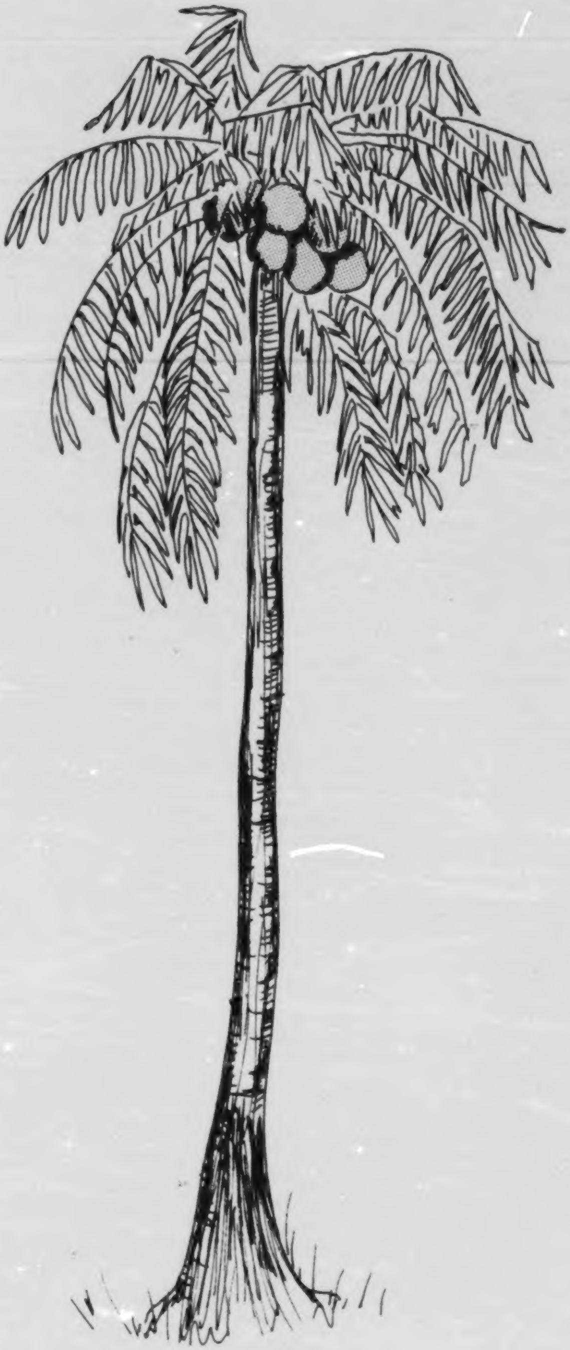


Protect the floor under the trough or put the trough outside. Place the coconut securely in the trough and let the children pound on it. They can use a small wooden mallet or make a hammer by screwing one piece of wood for a hammerhead to a short length of wood for the handle. To be safe, the head should be screwed on rather than nailed.



School-agers may not be able to break the shell, but they will realize how hard it is. This is a good way to release strong emotions and extra energy.

If they can't break the shell, saw the coconut into halves. Dig out the meat, prying it from the shell with a sturdy spoon or dull-bladed knife. Save some of the meat for ambrosia and other recipes which call for coconut.



Orange Ambrosia

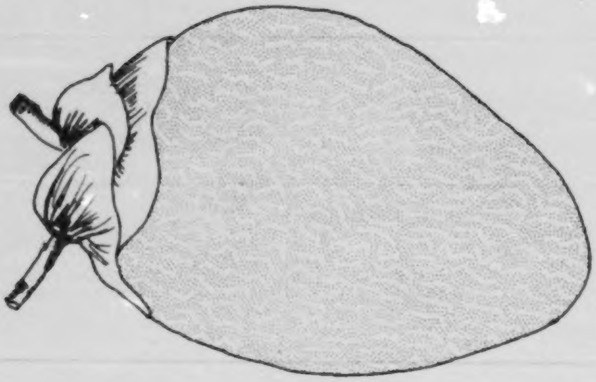
- 8 medium-to-large peeled oranges
- ½ to 1 cup of shredded coconut
- powdered sugar (optional)
- other fresh fruits (optional)

Slice peeled oranges into ½-inch cartwheels, removing any seeds. Or, cut knife-peeled oranges into sections. Alternate layers of oranges and coconut in a serving bowl, lightly sprinkling orange layers with powdered sugar. Other fresh fruits may be added. Sprinkle the top with a layer of coconut and chill before serving. (Mention to the children that a long time ago, recipes probably called for a "small handful of shredded coconut" rather than for the precise measures now specified in cookbooks.)

Wash the leftover shell halves. When dry, use for hanging baskets, musical instruments, accessories in the block corner or housekeeping area. Or place the shells with the other creative materials in the classroom - school-agers will be able to think of many other ways to use them.

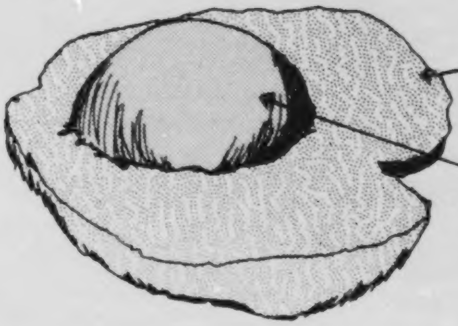
Following are coconut pictures which might go on a bulletin board.

The Coconut



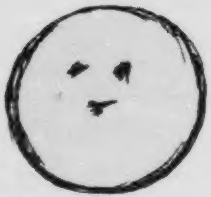
Smooth Tan Surface

Whole Fruit


Fibrous Husk
Coconut Seed

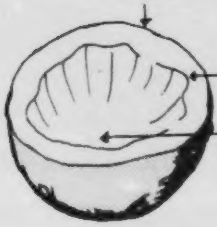
Fruit Cut Open

Whole Coconut



Rough Surface

Brown hard shell has 3 eyes. The new plant will grow through one of the eyes.



The white coconut meat has a cavity which contained coconut milk.

Sliced Coconut

4. Larger Projects

Many food projects take much effort and time. For instance, making bread takes most of a day. Sprouting seeds lasts for at least five consecutive days. The study of milk products usually takes several days or weeks.

Not everyone will be interested in these long-term activities. Ask for volunteers from among the children.

Have guests who are experts in bread making, freezing ice cream, or whatever the special project may be and who want to talk to the children. The school-agers themselves may be experts or know someone who is.

Milk Products

The idea of milking a cow interests most children and might be discussed. Maybe one of the children has experience.

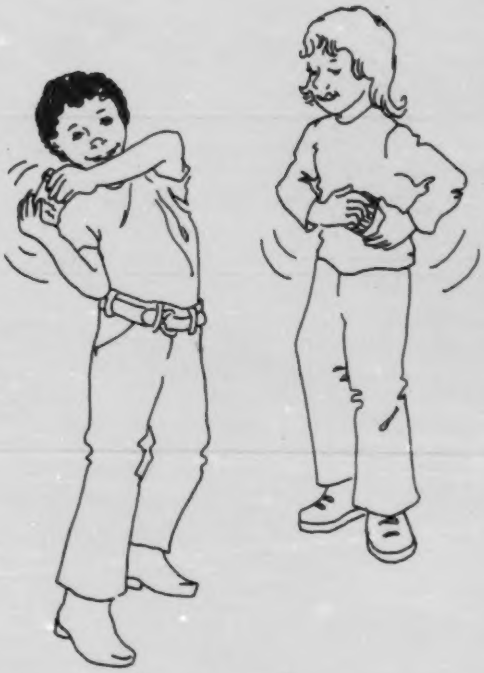
If possible, compare the taste of raw milk (from a cow which has been tested within the past year by the State Department of Health Resources) with the taste of store-bought milk. The latter has been pasteurized (heated to destroy bacteria) and homogenized (fat particles have been distributed through it).

Cream

Pour raw milk into a glass and let it stand for several hours. It will separate into cream and skimmed milk. Let the skimmed milk stand overnight and it will separate into clabber and whey. (Clabber is the curdled or thickened part; whey is the watery part).

Butter

Fill three or four small jars about ¼ full of cream. Use store-bought cream or cream which has been skimmed off the top of the raw milk.



Screw on the lids tightly and let the children shake the jars until butter forms (about 10 minutes). Separate the butter from the whey by pouring the mixture through a strainer. The butter will stay in the strainer.

Butter will form faster if the cream is beaten in a bowl with a rotary beater. One child could use the beater while the others shake the jars. School-agers might want to look at an encyclopedia for more information about making butter. Serve the fresh butter with whole wheat bread or crackers.

Yogurt, cottage cheese, sour cream, and soft cheese are fermented milk products with little resemblance to milk. They are in most grocery stores and can be made in the classroom.

Basic Yogurt

- 1 quart fresh milk
- 2 tablespoons powdered milk
- 1 tablespoon plain, unflavored commercial yogurt

Combine fresh milk and powdered milk in a heavy stainless steel or aluminum pot. Cook over low heat, stirring constantly until it boils. Pour into a bowl and cool to approximately 80 degrees. Blend ½ cup warm milk with the yogurt until the mixture is smooth. Combine with the rest of the warm milk. Pour into a jar, using a funnel. Cover and keep between 105 degrees and 112 degrees for 3 to 5 hours. Yogurt-making appliances with temperature controls can be used, but they're not necessary. An incubator can be improvised. Nestle the yogurt jar in an electric heating pad, at the lowest setting for 3 hours. Or place yogurt in a casserole, cover, and set in a pan of warm water on a radiator or in the oven, at the lowest temperature for 3 to 5 hours. Or use a Balkan method: pour warm yogurt mixture into a casserole, cover, wrap in a blanket, and leave in a warm room overnight. By morning the yogurt will be thick and ready for chilling. Warning: don't let the heat rise above 115 degrees Farenheit.

Fresh Fruit Yogurt

* recipe for basic yogurt
* ½ cup fresh fruit or berries
* honey

Mix ingredients and chill before serving. Makes 10 small servings.

Labna or Yogurt Cheese

Empty 1 pint (2 cups) yogurt into a cheesecloth-lined sieve. Set over bowl and let stand for about ½ hour. Tie the corners of the cheesecloth to form a bag. Wrap string around the top and suspend the bag by tying it to the neck of a faucet. Let it drain for at least 12 hours, or until the cheese is firm. Put the cheese into a bowl. In many recipes yogurt cheese can be substituted for whole-milk ricotta. It will keep in the refrigerator, covered, for about two weeks. Makes 1 cup.

Sour Cream

* 1 pint fresh dairy heavy cream
* 5 teaspoons commercial cultured buttermilk

Shake buttermilk container before measuring. Thoroughly mix the cream and the buttermilk. Pour into a container that allows an inch or two of space at the top. Cover tightly and shake thoroughly. Let stand in a warm place (70 to 85 degrees) for 24 hours. Or, improvise an incubator as described in basic yogurt. Refrigerate and serve cold.

Homemade Vanilla Ice Cream

* 4 eggs
* 1 cup sugar
* 2 tablespoons flour
* 20 pounds finely chopped ice rock salt
* 1 quart whole milk
* 1 tablespoon vanilla
* ¾ can evaporated milk
* 1 can sweetened condensed milk

Beat the eggs until fluffy. Mix sugar, flour, and salt. Add them to the beaten egg and mix thoroughly. Blend. Add the evaporated and condensed milk. Pour into the freezer can. Adjust the dasher and cover. Pack with chopped ice and salt. Freeze until the freezer's hard to turn. Remove the dasher, plug the opening into the lid, and replace it on the can. Add salt and ice to fill the freezer, cover the freezer and let it sit for about 2 hours for smooth, hard ice cream. This recipe makes a gallon of ice cream (enough for 25 school-agers to have ⅔ cup each).

Making ice cream is the time to spend money, especially if the children never have made it. Freeze at least a gallon of vanilla ice cream. Or, make one vanilla batch and divide it into four equal parts. Add a half cup of seasonal fruits to each quart of the ice cream and freeze in quart size freezers. Leave in pieces of fruit if the children want, otherwise puree the fruit before adding it.

Hints for Using Ice Cream Freezers

1. Follow the manufacturers' directions to assemble the freezer.
2. Scald the freezer can and dasher (or paddle) before using.
3. Chill ice cream or sherbet mixtures before placing in the freezing can.
4. Fill the freezer can only ⅔ to ¾ full. The mixture will expand.
5. Adjust the dasher and can in the freezer, then pack with chopped ice and salt.
6. Use finely crushed ice. The finer the ice, the smoother the texture.
7. Use 8 to 10 parts ice for every part of rock salt.

Freezer size	*Ice for making and freezing*	*Salt for making*	*Salt for freezing*
2 qts. to 2½ qts.	15 lbs.	1½ cups rock or 1 cup table	1½ cups rock or 1 cup table
4 qts.	20 lbs.	2½ cups rock or 1½ cups table	2½ cups rock or 1½ cups table
6 qts.	25 lbs.	3¼ cups rock or 2 cups table	3¼ cups rock or 2 cups table

8. Turn dasher slowly until ice melts to form a slush, then turn it fast and steadily unitl turning becomes difficult.
9. Add ice and salt proportionately to maintain ice level.
10. Before taking off the lid and removing the dasher, remove ice until it's below the level of the lid.
11. To freeze the ice cream, cover the can with several thicknesses of wax paper, foil, or plastic. Plug the opening in the lid and replace the lid. Pack the freezer with ice and salt. Cover with heavy clean towels or other cloth.
12. After each use, wash the can, wash the dasher in hot soapy water, rinse and dry. Don't replace the can cover until the can is dry.
13. Wash the freezer bucket after each use to be sure all the salt is removed.
14. Clean the motor or crank with a damp cloth after each use. Do not put the motor in water. Oil the motor or crank mechanism after each use unless the manufacturer says otherwise. The motor will only need a drop or two of oil on the motor sleeve.

Bread

Most school-agers have never made real bread. Bread-making requires time, patience, and an understanding of procedures and ingredients. It becomes easy with practice but seems complicated at first.

Basic Bread Recipe

* 2¼ cups all-purpose flour
* ¼ cup warm water
* 1 package powdered yeast
* 3 teaspoons sugar
* 2 teaspoons shortening
* 2 cups milk
* 1 teaspoon salt
* 3¾ cups whole grain flour (rye or other flour also may be used)

Dissolve the yeast in warm water. Put the milk, shortening, sugar, and salt in a pan and heat until the sugar and shortening melt. Cool until lukewarm. Then stir in the yeast and the all-purpose flour. Beat well. Mix in the whole grain flour, knead for about 10 minutes and let rise until doubled in bulk. Puncture and compress into 2 large loaves. Let rise pans until nearly doubled in bulk. Bake at 400 degrees for about 10 minutes. Reduce the heat to 375 degrees and continue baking for 40 minutes. If individual loaves are made by each child, baking time should be reduced slightly.

It's done when the loaf has shrunk from the sides of the pan. When the bread has finished baking, remove it from the pan and rub oleo lightly over the top and sides. Then let it cool.

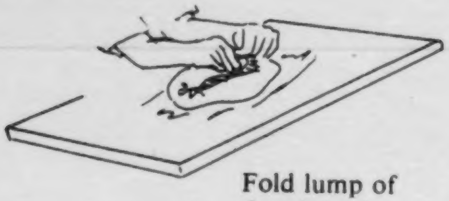
Information for the Beginning Baker

Yeast – To prepare yeast for the straight dough method, dissolve compressed yeast in liquid at 85 degrees. If the yeast is in dry powdered form, the liquid should be between 110 degrees and 115 degrees. At one time, milk was scalded to kill bacteria. But now with pasteurized, powdered, and canned milk, heating enough to dissolve the sugar and melt the fat is all that's necessary.

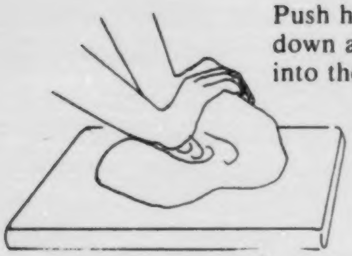
Mixing – Small amounts of sugar and salt help activate the yeast. Don't use more of either than is called for. If the yeast is active, it should dissolve in about 10 minutes without stirring. Stir the flour into the dissolved yeast mixture. Gradually mix in half the required flour and beat for about a minute. Then, as the rest of the flour is added, mix by hand. When the dough begins to leave the sides of the bowl, turn it out onto a lightly floured board or pastry cloth.

Kneading - Flours vary in moisture content. Experience will teach how much to add to the dough. Follow the recipe. The dough will be sticky when first turned out on the board. Cover it with a cloth and let it rest for about 10 minutes before kneading. With continued kneading, the dough becomes smooth and elastic and won't stick to the board or cloth.

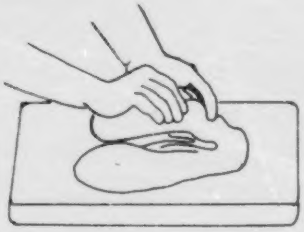
To knead:



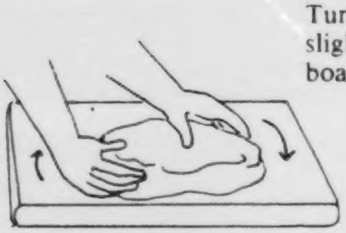
Fold lump of dough in the middle.



Push heel of hands down and forward into the lump of dough.



Fold resulting flap of dough back over base.



Turn lump of dough slightly on floured board and repeat.

Rising - Grease a large bowl and put the dough in it. Then turn the dough so the entire surface is lightly greased. Cover the bowl with a damp cloth. Yeast dough should rise at a room temperature of about 75 degrees to 80 degrees. If the room is cold, put the bowl of dough over a pan of warm water. This usually takes an hour to an hour and a half. Punch the dough down into the bowl after the first rising and make it into a ball again. Now it's time to shape the loaves.

Loaves - Divide the dough into the number of pieces called for in the recipe. Shape them lightly into mounds, cover with a cloth, and let rest for 10 minutes. Grease the pans and shape the mounds of dough into them, making sure the dough is touching all sides of the pan. Cover the pans with a damp cloth and let the dough rise to almost double in bulk. Preheat the oven to the temperature called for in the recipe and bake.

Sprouting Seeds

This is a good way to make seeds into nutritious, easy-to-prepare foods. Sprouts can be eaten raw or cooked, alone or with other foods. Sprouting also increases the vitamin content of the seeds.

Sprouting seeds can be fun. It's also an economical way to add variety and nutrition to family or day care diets.

Seeds To Sprout

Most grains, peas, and beans can be used. Especially good are alfalfa, mung beans, peas, and the cereal grasses - wheat, oats, barley, and rye. Sprouts vary in flavor, size, appearance, and texture, so compare several to decide which to grow.

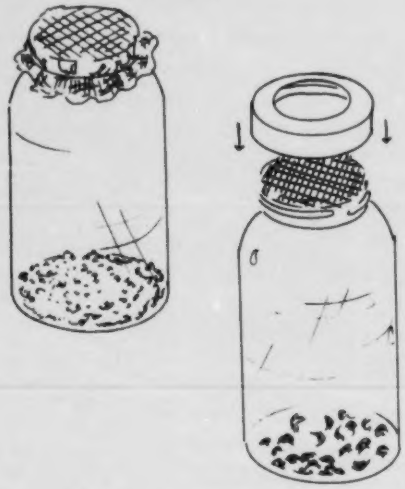
Be sure seeds are food seeds and not seeds sold to be planted. Most garden seeds have been treated with chemicals.

Seeds such as pinto beans, great northern beans, black-eyed peas, and soy beans are in most grocery stores. Health food stores will have other seeds.

Necessities for Sprouting Seeds

* Clean whole, untreated seeds. One tablespoon of alfalfa seeds produces one quart of

sprouts; one-fourth cup of mung beans produces one quart of sprouts.

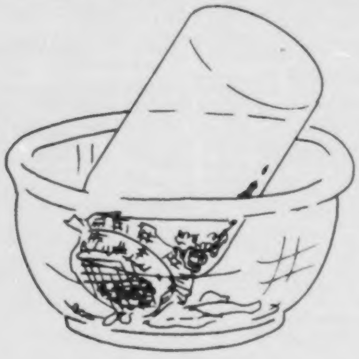


- Clean widemouth, glass jars, or quart jars.
- Clean covers for the jars through which water will drain. Tie nylon net or cheese cloth to the mouths of the jars with rubber bands, or a plastic screen cut to fit the jartops and held in place by a screw on rim. Or punch holes in the lids.

Do not eat potato sprouts. They are extremely poisonous.

Method for Sprouting Seeds

1. Clean and rinse the seeds.
2. Place each type of seed in a separate jar. Soak the larger seeds overnight. Pour off the water and rinse. The seeds should be moist but not standing in water. Set the jar at an angle to drain (as shown). Then set it upright again.



3. Keep the jar in a dark place.
4. Every 24 hours, rinse with water and drain at least twice. The sprouting seeds will sour and rot unless rinsed.
5. Don't rinse away the outer hulls. They're good to eat, too.
6. The sprouts will be ready to eat in three to six days, depending on the temperature, the kind of seed, and how much growth is wanted.
7. Before eating them, put the jar of sprouts in the sun for a few hours to make them green.

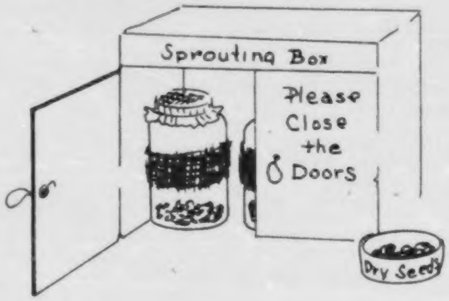
Participation By the Children

At first, use larger seeds such as mung or pinto beans. Later, the group might grow tiny alfalfa sprouts and larger sprouts at the same time and the children could compare their sizes, tastes, textures. Save a few dry seeds to compare with the sprouting seeds.

School-agers can participate by:

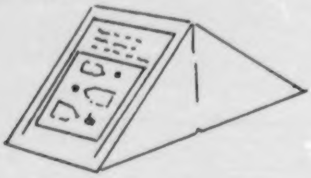
- examining the seeds;
- washing the seeds and putting them into jars;
- rinsing the seeds regularly;
- comparing the growing sprouts to the dry seeds;
- tasting the sprouts at each stage; and
- deciding when and how to prepare, serve, and eat the sprouts.

If there's not a dark place in the room where children can watch the seeds sprout, make a sprouting box. The one shown here is a cardboard box with an open side on the bottom and doors cut, as shown. The fastener is a loop of cord which hooks over a bottle top.



Cut a four-inch piece of nylon hose and wrap it tightly around the jars, as shown. The children can grip the hose in order not to drop the jars.

Next to the sprouts might be displayed "How a Bean Grows," taken from the nature section of this guide. One way to do this is to staple the paper to a folded piece of cardboard and stand the cardboard upright.



Encourage school-agers to invite their parents to see the sprouting process. Special displays might be made for the parents.

Ways To Eat Sprouts

- alone
- in a bread, sprout, and butter sandwich or in place of lettuce in any sandwich
- in a salad with other vegetables
- sprinkled in hot soup
- in pancakes, muffins, quick breads
- steamed for a brief time and buttered

5. Activities With Cultural and Ethnic Foods

Texas is a mix of many cultures. Children in school age day care come from many different backgrounds.

An "ethnic" group is one whose members have similar backgrounds, traits, and customs.

Texans are predominantly Anglo-Saxon, but other ethnic groups are a big part of the Texas culture. Chief among these non-Anglo groups are those of Mexican and Spanish descent. Mexican food, very much like that eaten five hundred years ago by the Aztecs, is a Texas favorite. The influence of the Black American's "soul food" is strong. The Germans also have left a strong mark on Texas. Other ethnic groups in Texas are Indian, Jewish, Polish, Norwegian, Italian, Greek, Czecholslavakian, French, Syrian, and Lebanese.

This section deals with foods and traditions of some of these ethnic groups. Family and community involvement is welcome. Parents could prepare foods in the classroom with the children or prepare special dishes for day care social time.

Activities concerning foods are good ways to share cultures. Besides food preparation and eating, the class might study *why* certain foods are eaten. They may be part of regular diets, associated with special occasions, or related to a geographic area.

Ask the children about their ethnic background. Ask them to share some of their traditions and special recipes. Develop activities to help children appreciate their heritages and realize the importance of their ethnic class in American society.

African Foods

Tapioca

The root of the cassava plant is ground to make tapioca.

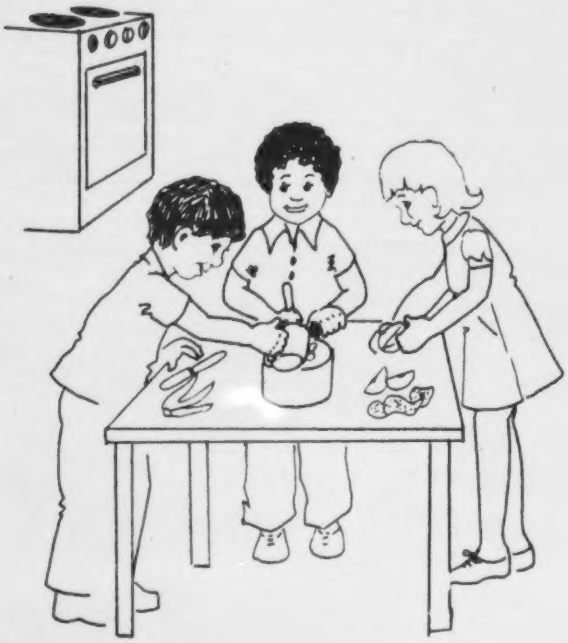
Tapioca Pudding

Available in stores. Prepare according to directions on the package.

Tapioca Fruit Soup

- * 2 tablespoons quick-cooking tapioca
- * 1½ cups water
- * 1 tablespoon sugar
- * 1 dash of salt
- * ½ cup quick-frozen concentrated orange juice
- * ½ cup diced orange sections
- * 1 medium banana

Combine the tapioca and water in a saucepan. Cook an stir over medium heat until mixture boils. Remove from heat. Add sugar, salt, orange sections, and sliced bananas. Other fruits may be used.



Yams

Yams are grown in many sections of Africa and are a basic food for many African families. The orangey, moist kind of sweet potatoes in this country are called yams. They are high in Vitamin C.

Yams may be boiled, baked, candied, or fried. They may be eaten alone or combined with other fruits such as apples. They may be an ingredient in breads, desserts, and casseroles.

Children may peel raw yams and put them in a pan. Cook in salted water until tender. Drain and add butter. The children can slice or mash them, then eat them.

Yams can be cooked without peeling. Place in a pan, cover with water, add salt, and cook until tender. Drain, cool, peel. Slice and experiment with different flavors.

Yams also can be fried as French-fries. Allow half of a potato per child. Peel and cut into slices. Fry, drain, and salt.

Chocolates

Chocolates the children may want to taste:

- * powdered cocoa
- * unsweetened chocolate
- * semi-sweet chocolate
- * instant chocolate pudding

Bitter chocolate is sugarless. Semi-sweet chocolate has about 60% bitter chocolate and 40% sugar. Some children are surprised that chocolate isn't sweet until sugar is added.

Hot Chocolate

Mix in cup:

- * 1 teaspoon cocoa
- * 3 teaspoons sugar or less
- * ⅓ cup powdered milk

Fill cup with hot water. Stir. Children enjoy measuring and stirring.

Chocolate Pudding

Mix in cup:

- * 2 tablespoons instant chocolate pudding
- * ⅓ cup cold milk

Stir until thick.

Bananas

The banana is an important African food. It has a lot of starch and sugar. It is a valuable source of quick energy. Be sure the children notice the seeds.

Fried Bananas

Slice bananas crosswise, then pan fry at medium heat in margarine. Sprinkle with lemon juice, brown sugar, and cinnamon.

Cargo Baked Bananas

- 6 bananas, peeled and cut in bite-sized pieces
- 2 tablespoons melted margarine
- lemon juice
- crushed corn flakes

Peel bananas and sprinkle with lemon juice. Brush with melted butter and roll in crushed corn flakes. Place in well-greased baking dish and bake at 375 degrees for 15-18 minutes or until tender.

Chocolate Dipped Bananas

- 4 bananas
- 1 6 ounce package semi-sweet chocolate chips
- ½ cup chopped or crushed peanuts

Melt chocolate in top of double boiler. Slice bananas crosswise. Dip in chocolate with a toothpick and roll in peanuts. Try dipping the banana in coconut flakes. Try dipping other fruits into the chocolate.

Peanut Stew

Made from raw or roasted peanuts. Roasted peanuts give a better flavor. Children enjoy shelling the peanuts.

- 1 cup roasted, shelled peanuts
- 4 cups water
- 5 beef bouillon cubes

Bring to a boil. Simmer for 15 minutes. Add salt to taste. Serve hot or cold.

Milk and Honey

The African custom is to make this drink in a large trough made from a hollowed log. Africans drink from the trough with long, reed straws. The children also may enjoy drinking this way.

- ½ cup Honey
- 1 quart milk

Mix in a shallow pan. Drink from trough or glasses.

"Soul Food" of Black Americans

"Soul food" was created by Black slaves, cooks, chefs, and housewives seeking to make a variety of tasty foods from a few inexpensive ingredients. Also, "soul food" can be set on the back of the stove in the morning to await the cook's return from work in the evening. Today, soul food includes a lot of country vegetables flavored with meats and eaten with corn bread and biscuits, often made with bacon drippings or chicken fat. The main source of meat is the pig and all its parts – fried, baked, barbequed, and sugar-cured. Soul food includes grits and sweet potatoes, and deep-fried fish.

A "Soul-Food" Meal:

- southern-style fried chicken
  or
- pork chops smothered with onions
- collard greens
- blackeyed peas
- cornbread
- roast corn cobs
- grits and cheese
- bread pudding with fruit sauce

Smothered Pork Chops

- 6 thick pork chops
- 2 lemons, sliced thin and separated into rings
- 1 green pepper, cored, seeded, and sliced into rings
- 1 bottle catsup
- 1 tablespoon margarine
- salt and pepper
- hot and melted bacon fat

Brown chops in bacon fat on both sides. Cover them with lemon slices, onion, and green pepper rings. Mix the catsup with ½ catsup bottle of water and pour over chops. Sprinkle with salt and pepper and dot with margarine. Cover tightly and cook slowly until very tender, about 1 to 1½ hours. Serves 6.

Collard Greens

* 2 pounds collard greens
* 2 tablespoons chopped onion
* 3 tablespoons bacon fat
* salt and pepper
* crushed red peppers

Wash, trim, and slice the collards. Saute the onions in bacon drippings in a heavy skillet or pan until soft. Add the chopped collards, salt and pepper to taste, and sprinkle with crushed red peppers. Cover and cook over low heat, stirring frequently, until the collards are tender (about 20-25 minutes).

Roast Corn Cobs

* 5 ears corn
* ½ cup soft margarine
* 1 teaspoon salt
* ½ teaspoon paprika
* dash of salt
* dash of tabasco sauce

Pull husks away from corn but don't tear them off. Remove the corn silk. Rub corn with mixture of margarine, salt, paprika, pepper, and tabasco sauce. Fold husks over cob. Wrap the corn in foil. Bake at 375 degrees for ½ hour or cook over moderately hot coals in a barbeque.

Bread Pudding With Fruit Sauce

* 4 cups 2-day-old bread, cut in 1-inch cubes
* 1 quart hot milk
* 3 eggs
* ½ teaspoon salt
* ¾ cup sugar
* 1 teaspoon cinnamon
* ½ teaspoon nutmeg
* 2 teaspoons vanilla

or

* 1 teaspoon almond extract
* 2 tablespoons butter, melted fruit sauce. (Crush fresh peaches, raspberries, or strawberries and sweeten to taste with sugar. Flavor with vanilla or almond extract.)

Stir the bread cubes into the hot milk and set aside. Butter a casserole or baking dish. Break the eggs into it and beat slightly. Stir in the sugar, salt, bread-milk mixture, cinnamon, nutmeg, extract, and butter. Set in a pan of hot water and bake at 350 degrees for about an hour. Serve warm or cold with fruit sauce. Serves 6.

Grits and Cheese

* 2 cups grits
* 1½ quarts water
* 1 teaspoon salt
* 1 stick butter
* 4 eggs
* ½ cup milk
* 2 rolls garlic cheese, or 12 ounces other cheese, cut fine or grated
* salt and pepper to taste
* grated Parmesan cheese
* paprika

Bring the water to a boil, add the grits slowly, stir until mixture thickens. Cook over low heat until done (about 25 to 30 minutes), stirring frequently. Stir the butter into the hot grits until melted. In a large blow, beat the eggs well and add the milk, garlic or other cheese, and salt and pepper to taste. Add the slightly cooled mixture of grits, blending well. Taste and season to taste. Pour into a well-greased large casserole, and sprinkle with Parmesan cheese and paprika. Bake in a preheated oven at 300 degrees for 30 minutes. Serves 6 to 8.

Mexican Foods

Texans have inherited from their southern neighbors a yen for the tang of hot foods. Many people think that Mexican food is no more than a bowl of chili and a big torilla. Not so – many foods, such as the tomato, avocado, eggplant, vanilla, and chocolate, have long been popular in Mexico.

The basic ingredient for Mexican cooking is corn. It grows in the high plateaus of Mexico and the Indians put it to good use. It is not the sweet golden kernal bought in cans, but hard and coarse. Mexican women grind, mash, and bake it on a hot stone. The result: wafer thin pancakes called "tortillas," the bread of Mexico. Make tortillas with corn meal or buy a corn flour, called "masa harina," available in most stores.

Tortillas

Mix 2 cups masa with 1 cup water. Make a small ball, flatten it, cook on both sides in small amount of fat in electric skillet at 350 degrees. Serve with butter or beans. (It's possible to buy little machines to flatten the tortillas.)

Children can take turns frying the tortillas.

Frijoles

The second most important food in Mexico is the bean or frijole. Spotted like a pinto pony, it's called "pinto" bean in Texas.

Wash 1 pound dried pinto beans. Add 2 quarts water and a small piece of salt pork. Salt to taste. Cook until tender, about 2½ hours. Serve with tortillas.

Tacos

Fry and brown 1 pound ground meat. Mix in a package of taco seasoning. Fill taco shells with 2 tablespoons of meat mixture. (Prepared shells may be bought.) Add grated cheese, chopped lettuce, and diced tomatoes.

Mexican Hot Chocolate

To a cup of chocolate, add a half teaspoon cinnamon and a tablespoon of whipped cream.

Tex-Mex Foods

Chili

* 4 pounds ground beef
* 2 teaspoons chopped garlic
* 2 tablespoons shortening
* 4 teaspoons ground cominos
* ½ cup chili powder
* 4 tablespoons flour
* 2 tablespoons salt
* 2 teaspoons pepper
* 6 cups water

Lightly brown ground beef and garlic in hot fat, stirring with fork to crumble beef. Cover and cook on low heat for 15 minutes. Combine cominos, chili powder, flour, salt, and pepper. Add to cooked meat and stir well. Add water and cook slowly 1 hour or until meat is tender. Serves 12.

Enchiladas

* 48 tortillas
* 4 tablespoons shortening
* 4 pounds natural cheese
* 6 chopped onions

Dip tortillas in heated oil. Place 1 tablespoon of cheese and 1 teaspoon of onion in the center of each tortilla. Roll tortilla and place in large baking dish, seam-down. Cover with chili. Top with cheese and onions. Bake at 350 degrees for 15 to 20 minutes until cheese melts. Serves 24.

Mexican Corn Soup (Soupa de Elote)

* 1 can whole kernal corn
* 2 quarts meat stock made from boullion cubes
* ½ cup finely chopped onions
* 2 tablespoons margarine
* ⅓ cup tomato puree
* 2¼ tablespoons salt
* ¼ teaspoon black pepper
* ½ cup heavy cream
* 1/8 teaspoon garlic salt
* ¼ teaspoon cayenne
* ½ teaspoon cumin seeds

Add corn to meat stock. Saute onions in butter until transparent. Add to corn and stock. Add tomato puree, salt, pepper. Cover and cook slowly for 20 minutes. Add cream and remaining seasonings and cook only until hot.

Avocado

Served in many interesting ways, the avocado is also a useful medicine. It has 11 important vitamins, including lots of Vitamin C. It has no harmful cholesterol. Don't wait to buy an avocado until the day it's to be used. Buy it when it's green and let it mature for several days. A good ripe avocado should be tender but not too soft. The outside skin should not be parted from the flesh.

Avocados may be peeled, sliced open, sprinkled with lemon juice or lime juice to keep them from turning dark, and cut into pieces to eat. Or, it may be mashed to make a dip served with tortilla chips.

Guacamole Dip:

Cut avocado in half. Remove seed. Scoop avocado meat from shell. Mash. Add juice from lemon, 1 chopped tomato, salt to taste. Serve with tortilla chips.

American Indian Foods

Because American Indians relied upon nature for food, they had to know where edible plants grew, when fruit ripened, and how to cultivate plants. Both men and women gathered food. Often women cultivated the soil, and gathered and prepared food. Men hunted game. Women spent much time pounding beans and grinding corn. Some vegetables grown by the Indians were sweet corn, flour corn, popcorn, kidney beans, lima beans, squash, pumpkins, white potatoes, sweet potatoes, tomatoes, and gourds. An Indian meal might include:

* tomato soup
* roast turkey
* baked potatoes
* squash
* succotash
* Indian pudding
* Indian fry bread

  or
* Indian piki bread

Some Indian foods which can be cooked in a classroom are:

* cornbread
* corn-on-the-cob
* popcorn
* peanuts
* sweet potatoes

Indian Pudding

Cook 2 cups milk and 2 tablespoons corn meal in double boiler for 20 minutes. Then add 2-3 tablespoons molasses, 3-4 tablespoons sugar, ½ teaspoon salt, and ½ teaspoon ginger. Add to greased baking dish and bake at 300 degrees for 2-3 hours. Serve warm.

Fry Bread

* 1 cup flour
* 2 teaspoons baking powder
* ½ teaspoon salt
* ¾ cup milk

Mix ingredients, adding flour if necessary to make stiff dough. Roll out on a floured board until very thin. Cut into strips about 2 or 3 inches long and an inch wide. Drop into deep fat. Brown on both sides. Serve hot with butter or sprinkle with sugar. Makes about 10 servings.

In many Indian tribes, food is part of courtship and marriage rituals. For example, the Hopi girl proposes to the Hopi boy. She prepares a plate of blue corn wafer bread called "Piki" and places it at his doorstep.

Piki Bread

Mix corn meal with water to form a soft batter. Heat and grease a flat stone, then spread batter thinly over it. It will cook instantly. Roll or fold, add butter.

Zuni Succotash

Cut beef in small squares as for stew. When the meat is tender, add corn and string beans. Add sunflower seeds to thicken it and salt for seasoning. Cook until think. (Flour or cornstarch may be substituted for sunflower seeds, for thickening.)

German Foods

Germans are the third largest ethnic group in Texas and German food is plentiful and varied. Germans eat meat and potatoes, as do Americans. However, Germans have unique ways of making these foods tasty.

There's a lot of pork, beef, and veal in Germany, so Germans have long been meat-eaters. Wurst (sausage) is a popular meat. Dinner, served between 6:00 and 7:30 p.m. is the big meal. No German meal is complete without soup. There is soup to fit every whim and appetite. Goulash soup is thick with meat and potatoes, fruit soup is light and refreshing. German salads are sharp rather than oily.

Holidays such as Weinachten (Christmas) call for special sweets such as Springerle, Lebkuchen, and Pfeffernusse.

Curry Wurst

This is a variation of the wurst sold on the street corners of Berlin, and a good way to prepare small sausages.

- 1½ pounds small sausages (weiners) or frankfurters cut in 1½-inch pieces
- 2 cups spicy tomato sauce
- curry powder
- paprika

Put wurst in tomato sauce. Keep hot in chafing dish. As wurst is served onto plate, sprinkle with curry powder and paprika, and spoon sauce over it. Or add ½ tablespoon of curry powder and paprika to tomato sauce and stir.

Goulash Soup (Gulyassuppe)

To be at its best, this soup should be made the day before it's served.

- 1 pound beef (chuck)
- 2 tablespoons fresh beef fat or bacon fat
- 1 1 large onion, diced
- 1 heaping tablespoon Hungarian sweet paprika
- salt and pepper
- 2 tablespoons vinegar
- 1 tablespoon tomato paste
- 1 tablespoon caraway seeds
- ½ teaspoon marjoram
- 1 clove garlic
- 3 medium sized potatoes, peeled and diced
- 1½ quarts water

Cut beef into ¾-inch to 1-inch cubes. Heat beef fat or bacon fat in 3-quart saucepan and saute onion until golden. Sprinkle with paprika and saute a minute or two, stirring constantly over very low heat. Add beef and stir. Brown meat slightly. Sprinkle with salt, pepper, and vinegar. Stir in tomato paste. Simmer 3 or 4 minutes, then add caraway seeds, marjoram, garlic, and water. Boil, then cover and simmer 45 minutes or until meat is almost done. Add diced potatoes and cook slowly 15 or 20 minutes, or until meat and potatoes are thoroughly cooked.

German Noodles (Spatzle)

Spatzle may be served in soups, or as a side dish with meat. In the latter case, pour over them hot, melted butter just before serving.

- 2¼ cups flour
- 1 teaspoon salt
- 1 egg, well beaten
- ¼ to ¾ cup water

Sift flour and salt into a bowl. Add egg and mix. Add water gradually until batter is stiff but smooth. Press dough flat on a plate or floured board. With a sharp knife, scrape off small pieces of dough and drop into boiling, salted water. Boil gently 5 to 8 minutes. Remove from water with perforated spoon and drain.

Wienerschnitzel
(Germany's Most Popular Meat)

- 6 veal cutlets, pounded
- lemon juice
- salt
- ½ to 1 cup flour
- 2 eggs lightly beaten with 2 tablespoons cold water
- 2 tablespoons salad oil
- 1 generous cup of dry, fine breadcrumbs
- 4 to 5 tablespoons butter, lard, or vegetable shortening

Veal cutlets may be soaked in a sprinkling of lemon juice for 30 minutes before breaded. Whether or not they are marinated, sprinkle with salt on both sides before breading. Measure flour onto a sheet of waxed paper or a flat plate. Beat eggs and water in wide flat bowl. Mix in oil. (The oil will make the breading stick to the meat and make it crisp.) Measure breadcrumbs onto a sheet of waxed paper. Dip salted cutlets lightly into flour on both sides, then into the eggs. Let excess egg drip off and cover cutlets with breadcrumbs. Let stand at room temperature 15 to 20 minutes. Heat fat in a large skillet. There should be enough in pan for cutlets to "swim." Do not crowd cutlets into pan. Cook 2 or 3 at a time. Put cutlets into pan when butter is very hot, after bubbling starts to subside. Fry first side slowly until golden brown. Turn over and brown on other side. (Allow 4 to 6 minutes for each side.) Place cutlets on platter, and into a 250 degree oven so they will stay hot while others are being fried.

Cucumber Salad

Peel 2 large cucumbers and cut into thin slices. Layer them in a wide bowl, sprinkling each layer with salt (preferably coarse). Place another bowl on top of cucumbers to weight them down. Set in refrigerator 1 to 2 hours or until all water is gone. Drain and, if too salty, rinse quickly and drain again. Sprinkle with white pepper and cover with mixture of half water, half vinegar. Season with sugar and salt if necessary. Minced dill and/or parsley can be added, as can very thinly slivered raw onion rings. Chill at least an hour and serve.

Bavarian Cream (Bayrishceh Creme)

- 4 egg yolks
- ⅓ to ½ cups sugar, depending on other flavorings
- 2 cups liquid such as milk, or sweet fruit juice
- flavorings such as lemon juice and grated rind, or vanilla bean or extract
- chocolate or grated nuts, or caramel syrup
- 2 envelopes unflavored gelatin
- ½ cup cold water
- 3 to 4 egg whites, beaten
- ½ to 1 cup heavy cream, whipped

Beat egg yolks and sugar until very thick and pale yellow. Stir liquid and flavoring and set over hot but not boiling water. The water should not touch the bottom of the mixing bowl or upper pan. Beat over hot water until mixture is puffy and thick enough to coat a wooden spoon. Soften gelatin in ½ cup cold water about 5 minutes and then set over hot water until dissolved. Stir into warm custard mixture, blending thoroughly. Chill until well thickened but not set. Meanwhile, whip cream and beat egg whites to stiff peaks. Fold cream into cooled, thickened custard and then fold egg whites in. Do both gently but thoroughly, using a rubber spatula. Turn into a glass serving bowl and chill until set.

Springerle

- 4 eggs
- 2½ cups fine, quick-dissolving granulated sugar
- grated rind of 1 lemon
- 5½ cups flour
- about ¾ cup anise seeds

Beat eggs with sugar 30 minutes by hand, or 10 minutes in an electric mixer. Mixture must be almost white, and thick. Add lemon rind. Sieve flour into mixture gradually, stirring well between additions. Dough should be thick enough to knead. Add more flour if necessary. Knead dough on floured board until shiny. With a floured rolling pin, roll out dough to ¼-inch to ½-inch thickness. Flour a Springerle board or rolling pin, and press or roll design on dough. Cut squares. Grease a baking sheet and sprinkle liberally with anise seeds. Place cookies on baking sheet and let dry uncovered, at room temperature for 24 hours. Bake in preheated 250 degree oven until pale golden but not brown, 15 to 20 minutes.

* Note - Springerle boards can be found at some department and specialty stores. They are easily found around Christmas time when this cookie is made in German homes.

Jewish Foods

Since 1837, Jewish people have come to Texas in ever-increasing numbers. Some settled in the commercial centers of Galveston, Houston, and San Antonio. Soon, they began organizing traditional Jewish institutions.

The Jewish family is a close family. Traditions are important to them. On Jewish holidays, tables are heaped with unique and delicious dishes.

Hannukah Potato Latkes (Pancakes)

- 2 eggs
- 3 cups grated, drained potatoes
- 4 tablespoons grated onion
- 1 teaspoon salt

- ¼ teaspoon pepper
- 2 tablespoons cracker or matzo meal
- ½ cup fat or butter

Beat eggs. Add potatoes, onion, salt, pepper, and meal. Heat ½ of the fat in frying pan and drop in potato mixture by the tablespoon. Fry until brown on both sides. Keep pancakes hot until all are fried, adding more fat or butter as needed.

Matzos Sponge Cake for Passover

- 9 eggs, separated
- 1¼ cups sugar
- ¾ cup matzos cake meal
- 1 teaspoon vanilla

Preheat oven to 350 degrees. Beat whites until stiff. Beat yolks and sugar until light. Fold beaten whites into yolks. Blend in flour and vanilla. Bake in ungreased tube pan for 40 minutes. Invert pan until cake is cool.

Challah (Egg Bread) for Sabbath

- 1 cake or package yeast
- 2 tablespoons sugar
- 1¼ cups lukewarm water
- 2 teaspoons salt
- 2 eggs
- 4½ cups sifted flour
- 2 tablespoons salad oil
- 1 egg yolk
- 4 tablespoons poppy seeds

Combine yeast, sugar, and ¼ cup lukewarm water. Let stand 5 minutes. Sift flour and salt into a bowl. Make a well in the center. Drop in eggs, oil, remaining water, and yeast mixture. Mix with flour. Knead on a floured surface until smooth and elastic. Place in bowl and brush the top with oil. Cover with a towel, set in a warm place, and let rise until double in bulk. Divide dough into 3 equal parts. Between lightly floured hands, roll the dough into 3 strips of even length. Braid together and place in a baking pan. Cover with a towel and let rise until double in bulk. Brush with the egg yolk and sprinkle with poppy seeds. Bake at 375 degrees for 50 minutes or until browned. Makes a very large challah.

Variations:

Divide dough into 6 parts and make 2 large loaves, or make 1 loaf and many small rolls. Bread also may be baked in a loaf pan.

Mixes are available. A white bread mix may be used. If individual loaves are used, bake at 350 degrees for 30 minutes. Raisins, chopped nuts, or apples may be added for flavor.

Hamantaschen

- ⅔ cup shortening
- ½ cup sugar
- 1 egg
- 3 tablespoons water or milk
- ½ teaspoon vanilla
- 2 cups flour, sifted

Jam, prune butter, apple butter, or prepared poppy seed filling may be used to fill dough. Mix shortening and sugar into a cream. Add egg, water or milk, and vanilla. Stir until smooth. Add sifted flour and stir thoroughly until a ball of dough is formed. Chill in refrigerator overnight. Cut into 2-inch balls. In the center of each, place desired filling. Then form edges into triangular shapes, pinching at three corners and partially cover the filling. Bake 10 minutes on well greased cookie sheet at 350 degrees.

Teiglach

- 4½ cups flour
- 2 teaspoons baking powder
- 8 eggs
- 1 pound honey
- 1 cup sugar
- 1 teaspoon ginger
- ½ cup chopped walnuts
- ½ cup chopped cherries

Combine flour, baking powder, and eggs to make dough. Knead. On lightly floured board, roll pieces of dough into ropes ½-inch thick. Slice ropes into ½-inch lengths. Pour honey in wide shallow saucepan, add sugar and ginger, and bring to a boil. Put pieces of dough into syrup, stirring frequently with slotted spoon. Cookies are done when they rise to the top, lightly browned. Put cookies on platter and top with chopped walnuts and cherries.

Food From the Cattle Drives

The western style continues to be popular throughout America. Western music, literature, movies, fashions, and food never seem to lose their appeal.

The most famous kitchen in the old west was on wheels. The dining room was the great outdoors. Three hearty meals a day was partial payment to cowboys for a day in saddle. This rambling restaurant was the chuckwagon. It carried bacon or dry salt pork, coffee, dried fruit, syrup, and the sourdough keg. A quarter of beef might be added to the load. Not only was the wagon the cowboy's boarding house, it was his home on the range, the only home he had during roundups and trail drives.

The most traditional western food is a beef stew of many ingredients and almost as many names.

Rancher's Beef Stew

- 2 pounds lean stew beef cut into 1 inch cubes
- 2 tablespoons butter
- 1 onion, chopped
- 1 cup consomme or 2 bouillon cubes
- ½ teaspoon salt
- ½ teaspoon pepper
- ½ teaspoon minced parsley
- 1 teaspoon steak sauce
- 1 teaspoon mustard
- juice of ½ lemon

Saute onion in butter. Dust beef pieces with flour, add to onion, and brown thoroughly. Stir in the broth, or 1 cup water and bouillon cubes. Season with salt and pepper. Simmer for about an hour until the meat is tender. Add steak sauce, mustard, and lemon juice and cook 10 minutes more. Add parsley and serve.

Outlaw Slices of Steak

- 3 pounds beef flank or sirloin tip
- ¼ teaspoon garlic
- 1 teaspoon salt
- ½ teaspoon pepper
- ½ teaspoon paprika

Rub the meat thoroughly with a mixture of the seasonings. Charcoal broil the meat about 10 minutes. Brush meat with Cattleman's Bar-B-Q Sauce (described below). Broil 5 minutes more. Slice diagonally.

Cattleman's Bar-B-Q Sauce

- 4 slices bacon diced
- 2 onions minced
- 2 teaspoons paprika
- 3 cups tomato sauce
- 1 teaspon chili powder
- ¼ cup dry mustard
- 1½ teaspoon salt
- 2 tablespoons dark corn syrup
- ½ cup molasses
- ¼ cup brown sugar
- 2 tablespoons liquid smoke
- 2 cloves garlic

Saute the bacon and onions in a large pot. Add the remaining ingredients and simmer for an hour.

Sourdough Biscuits

Hot biscuits also were an important part of the diet. Not only at home but also on the trail. Cooks were judged good or bad by the quality of their biscuits.

Starter:

- 2 envelopes active dry yeast
- flour
- 2½ cups lukewarm water

Dissolve yeast in warm water. Add enough flour to have the consistency of thick buttermilk. Place in warm spot (about 75 to 80 degrees) away from drafts. Let stand overnight. Once the starter is made, keep it covered and refrigerated until used. Bring it to room temperature before mixing.

Final Product:

- 2 tablespoons butter or lard
- 1 cup starter
- 2 teaspoons baking powder
- 1 tablespoon sugar

- 1 pinch salt
- flour to make a stiff dough

Combine ingredients, then add flour bit by bit to make dough, which should be a little stiffer than regular biscuit dough. Knead and shape into biscuits. Place biscuits in a well-greased pan or baking sheet and let them rise in a warm place (about 85 degrees) until doubled in size. Bake at 450 degrees until browned (about 15 minutes). Makes about 3 dozen.

6. Wild Plants as Food

Many wild field plants are delicious. However, it's important to know which parts may be eaten, which plants are poisonous, and where to find edible wild plants.

Weather, soil conditions, and growing seasons vary. Many plants may be eaten in one area but not in another. Contact a local authority to learn about plants in the neighborhood. This person will also know which parts of the plants may be eaten. Possible contacts for local information are the county extension agriculture agent and the county horticulturist. Often garden clubs and botany departments of colleges and universities can give useful information about wild plants. Perhaps some local plant authority could go with the school-agers on a food-gathering walk. Much also can be learned from books. Some plants school-agers find may be poisonous. The Texas Department of Health Resources offers a free brochure called "Poisonous Plants," good material for a day care center.

Areas within 500 feet of busy streets should be avoided when gathering plants. Plants in these areas usually have lead poisoning.

7. Preserving Food by Drying

Our ancestors dried food in order to preserve it. They learned to collect and save certain dried seeds and other parts of plants to be eaten during the winter. Then they gradually learned to dry the food themselves.

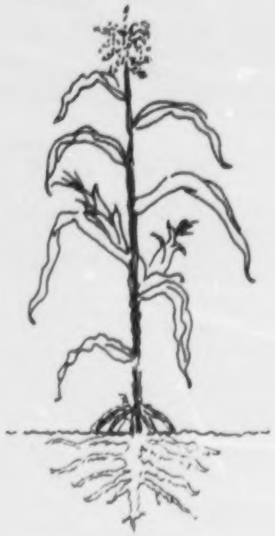
Currently, there is a revival of interest in drying foods because many people once again are growing their own food and looking for inexpensive and energy-saving ways to preserve it.

School-agers will enjoy seeking and collecting seeds, pods, dried stems, and leaves, and preparing them to eat.

Drying Corn

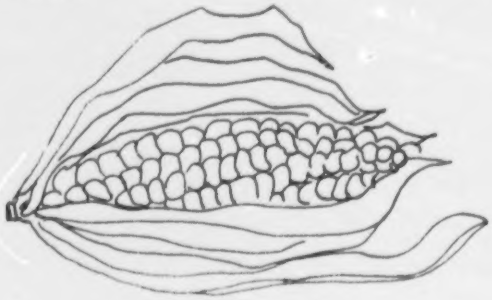
Corn is grown in Mexico and in every state in the union. it can be bought frozen, dried (popcorn, field corn), and canned the year round. Fresh corn in the husk is available most of the year.

The entire corn plant dries well. For the classroom, try to get one that has roots.



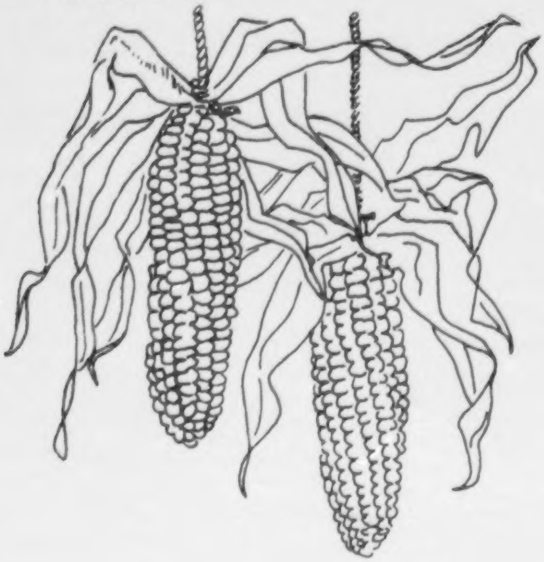
Drying the Ears

Use fresh corn in the husk. Get at least three ears — from a home garden or a cornfield, if possible.



There are several kinds of corn. The kind at the store is *sweet corn* or *dent corn*. Each kernal of dent corn has a small dent on the top caused by starch shrinking inside the kernel when the corn is dried.

Let the children handle and smell the corn. Discuss it with them. Show how to pull the husk back to see the corn silk running up the rows of kernels past the end of the ear. Press a few kernels to show how soft and full of corn milk they are. Taste a few.



Drying the ears is easy. Simply hang them by a string somewhere in the room where the children can see them. Check the changes in the ears every few days. Squeeze and taste the kernels.

Look for ears of *flint corn,* sometimes called "Indian corn." It is more expensive and sold as a decoration in hobby shops and during the fall in grocery stores. Indian corn is multicolored, ranging from yellow to deep red.

Drying the Kernel

Use at least one ear of corn to dry for cooking and eating. The fresher the corn, the better the flavor. The school-agers can do the husking, removing the silk and stirring the corn as it dries. They also may want to help dry it.

Here's how to dry the corn:

* Remove the husk and silk from each ear but don't break off the stem or tip of the cob.

* Put the corn in boiling water for five minutes. (Be sure the children don't get burned.) Then cool it quickly in cold water.

* When the corn is cool enough to handle, hold the stem with the left hand and rest the cob on its tip end on the cutting board. Cut the corn from the cob. When the kernels are off, use the dull side of the knife to press all the milk and kernel hearts from the cob.

* Spread the corn in a large metal pan (an oblong cake pan or pizza pan) about ½-inch deep. Stretch a nylon net tightly over the top of the pan to keep out flies. Dry the corn in hot sunshine. If possible, put the pan in a gas range at night. The pilot light's heat helps dry the corn. Stir occasionally so the kernels will dry at the same rate.

* When the corn is dry, it will be half its original amount. Store it in clean glass jars with tight fitting lids. Put them where the children can see them.

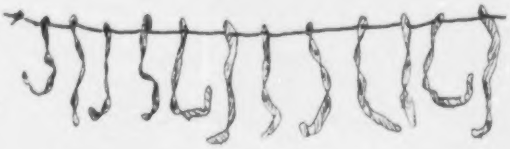
Corn smells good while drying. And it's nice to see the colors and textures changing.

When the winter comes, cook the corn for lunch.

Dried Sweet Corn

The following is a basic recipe for making dried sweet corn to eat as a vegetable. The corn also can be mixed with other vegetables, put in salads, or used in desserts such as puddings.

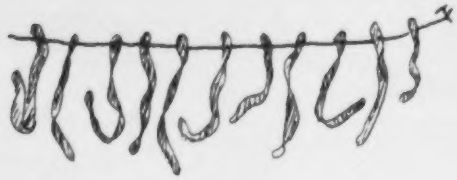
Combine a cup of dried corn and 2 cups of cold water. Soak for about 2 hours where the children can see the kernels swelling. Do not drain. Then add ½ teaspoon of salt and a tablespoon of honey. Cover and cook for about an hour until the kernels are tender. Add butter and 2 tablespoons of milk, if desired. Serve in sauce dishes so the liquid can be enjoyed too.



Drying Green Beans

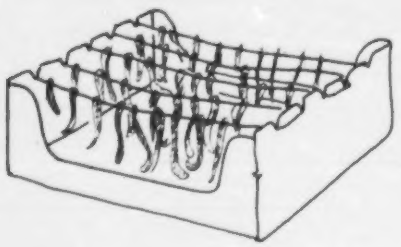
Puncture the beans with a blunt needle. String them as shown, using heavy thread or yarn knotted at the end. Hang the line in front of a window or wherever there is room. Space the beans so air can surround them and the children can see how they change while drying.

The beans will go through several stages - crispy, flexible, leathery, stiff. When they are dry they will be about a third their original size. It's interesting to add a few fresh green beans to the line every few days and compare them with the ones already hung.

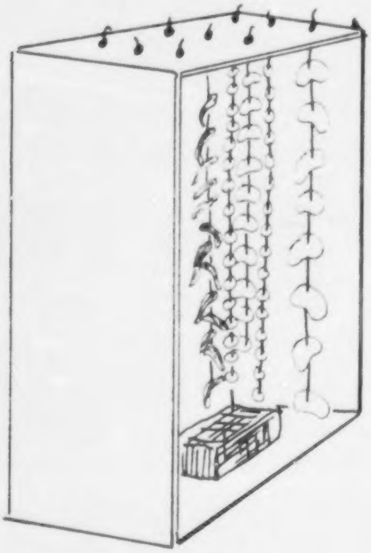


Racks For Drying Foods

Cut a cardboard box, as shown. Cut slits in the ends and run string between the slits.



Or place a box upright and hang food from the top. This works well when stringing vegetables such as okra or jalapeno peppers.



8. Special Activities With Foods

For some special activities such as outdoor cooking, school-agers may spend several days researching, planning, and preparing.

These activities are a good way to celebrate a birthday, "open house" for parents, Independence Day, and other special occasions.

Copying the Pioneers

Pioneers needed to preserve spring and summer foods for wintertime. And they needed food that would keep a long time to take on long trips.

Drying meats, fruit, and breads was one way to satisfy these needs.

Today, the same foods are nutritious and fun to prepare. School-agers will enjoy preparing and taking these foods on walks and other trips, and then having a "pioneer meal."

Hardtack: The Pioneer Staple

- 1 teaspoon salt
- 1 teaspoon sugar
- 5 cups flour
- water

Mix together a teaspoon of salt, a teaspoon of sugar, and 5 cups of flour (rye or other whole grain flour). Add just enough water to make a stiff dough. Roll the paste ¼ inch thick, cut it into pieces, and bake until very dry on a greased pan in an oven at a low temperature.

Jerky

- 4 lbs. boneless brisket
- 2 quarts water
- 2 cups salt
- 2 tablespoons pepper
- 1 cup vinegar
- cloves

Cut a boneless butcher-trimmed brisket into strips ¼ inch thick. Mix 2 quarts of water, 2 cups of salt, 2 tablespoons of pepper, a cup of vinegar, and a small handful of whole cloves. Boil the meat and remove as much water as possible by placing the strips between absorbent towels and rolling them with a rolling pin. Change towels until no more moisture is absorbed. Heat oven to 300 degrees. Place the meat on a pan and put it in the oven, leaving the door slightly open. The meat will take several hours to dry. It should be turned over every hour or so. When the meat is dry, let it cool and store it in jars that are screwed shut. If the meat gets too much moisture, it will mold.

Apple Leather

* 3 lbs. apples

Wash, peel, core, and slice cooking apples. Cook without water over low heat until the slices cook into a thick applesauce. Spread thinly over cookie sheets and dry in the sun for 2 to 3 days, or until the leather is soft, pliable, and chewey, with no moisture inside. Cut it into strips and hang it to dry for 24 hours. The longer the leathers are dried, the longer they will keep. Roll them into narrow cylinders and store in a closed jar.

Cooking Outdoors

Cooking outdoors can be a good leearning experience and lots of fun. It can make familiar foods look and taste different. For instance, children enjoy roasting foods on a stick over charcoal. Foil dinners are fun too.

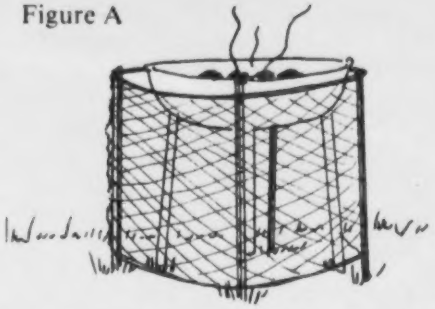
Good planning is required. Local parks usually have grills and picnic tables. Even a small yard or school ground may have a good spot to set up a safe grill and spread a blanket.

Plan ahead - Plan at least a few days ahead of time. Help the children plan a menu and make a list of the supplies needed. Early on the morning of the cookout, assemble the food and finish what must be done in the kitchen. Set out cardboard cartons, baskets, or paper bags, and help the children pack supplies by referring to the list they've made.

Safety - A permanent barbeque grill made out of bricks or concrete blocks is ideal. Otherwise, make a stable, protected grill using a metal habachi or barbecue grill.

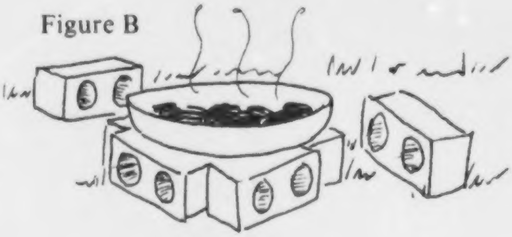
Drive 4 short metal posts into the ground close to the grill. Attach chicken wire, as shown, to keep the children from getting burned and from knocking over the grill. (See Figure A.)

Figure A



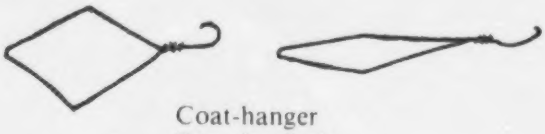
Or, remove the legs from the grill and set it firmly on concrete blocks. Sit down to cook. This also will prevent children from being burned. (See Figure B.)

Figure B



The children should take turns, a few cooking at a time. While waiting their turn, they can wash and break up greens for the salad, pour the beverage, or spread a blanket on the ground away from the cooking area, to sit on while eating.

At the cooking site - Set up the grill and let the children arrange the outdoor furniture, boxes, benches, etc. If there are trees or bushes near the cooking site, cut off stiff slender sticks 20 to 24 inches long with a dull point at one end. These can be the roasting forks. Don't use Oleander branches, they're poisonous. Roasting forks can be made from coat hangers, too.



Coat-hanger
Roasting fork

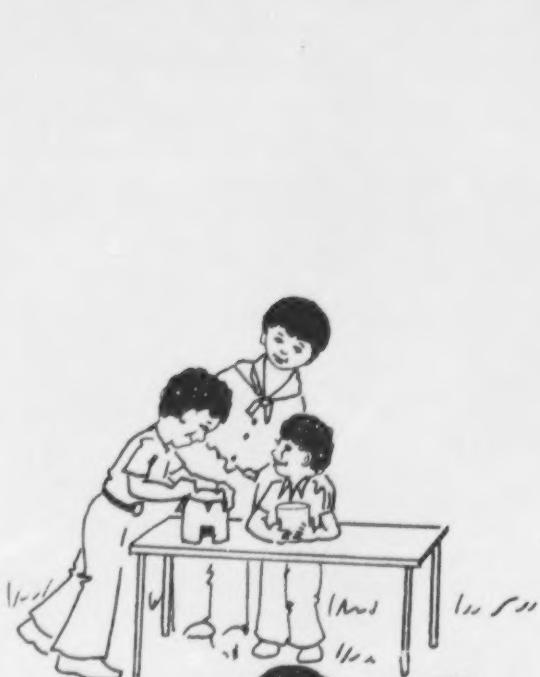
Bend as shown. Leave slight hook to hold food. Burn paint off the end that holds the food.

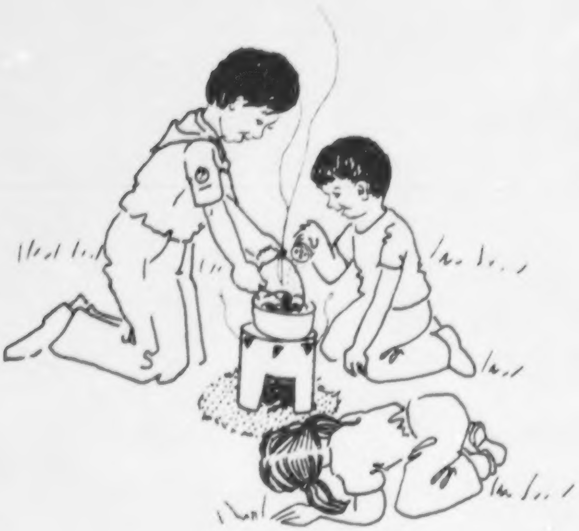
Light the grill so it has a glowing bed of coals ready for cooking. Don't leave the grill unsupervised after it's been lit.

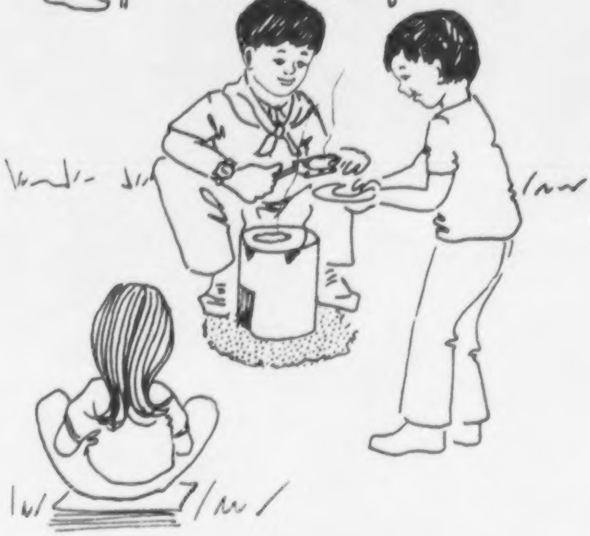
After eating - When finished eating, be sure the fire is out. Sprinkle water over the coals a little at a time so as not to make hot steam and smoke. The children can help throw away trash and pack food and utensils. Return outdoor equipment to its proper place.

Other Tips for Outdoor Cooking

Tin can stoves, buddy burners, reflector ovens, and other outdoor cooking methods are fun for school-agers to make and use. They require help from someone with experience. They also require extra supervision. Ask a Boy Scout, Girl Scout, or Campfire Girl group to give a demonstration and, if possible, work with the children on these projects.







Cooking on a Stick

Show how to hold the stick with the food 2 to 6 inches from the coals so neither the food nor the stick burns. Turn the stick slowly to cook and brown the food evenly.

COOKIES OR BISCUITS ON A STICK

Any of the variations listed with the "All-Purpose Mix" recipe can be cooked on a stick if the dough is stiff enough to hold together while cooking.

HOT DOG IN A BLANKET

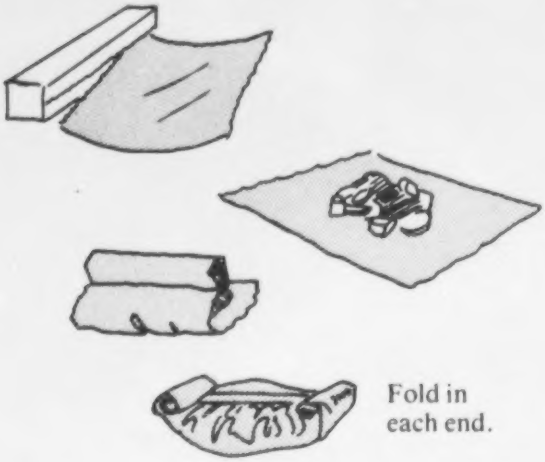
Put the weiner on the stick. Wind biscuit dough around the weiner and pin it.

ROASTED CORN

Break ears of cleaned corn into short lengths. Push a stick into the center of the cob.

Foil Dinner

Tear foil into squares. Place meat and individual servings of seasoned vegetables in the center. Fold the sides together. Fold in each end.



Lay the bundle on the wire rack over the grill, using pliers or tongs. Turn frequently until it's cooked.

Cut vegetables and meat into small pieces to cook quickly. Onions add flavor. Water or oleo may be added if the food is too dry.

Foil desserts are good too. Fresh fruit, apples, and peaches are delicious when cut up and sprinkled with honey and oleo.

Teas, Parties, and Refreshments

Children love planning, preparing and having parties. Birthdays, holidays - any time can be party time. Once the children understand this, they'll think of many reasons to have a party. They may want to have a party for friends not in day care, for parents or families, for townspeople who have been nice to them.

One good way to organize a party is with committees. After everyone decides on the occasion, the date and time, and the guests, divide into smaller groups. Everyone can help decide what these committees should be. Here are some suggestions:

* Invitations Committee
* Refreshment Committee
* Entertainment Committee
* Decorations Committee
* Arrangements Committee

Each committee could have a limited amount of spending money.

A Sample Party

A group of ten-year-old Campfire Girls decided to plan a Valentine's party. They discussed who they might invite:

* parents?
* entire families?
* school friends?
* friends from other neighborhoods?
* boys?

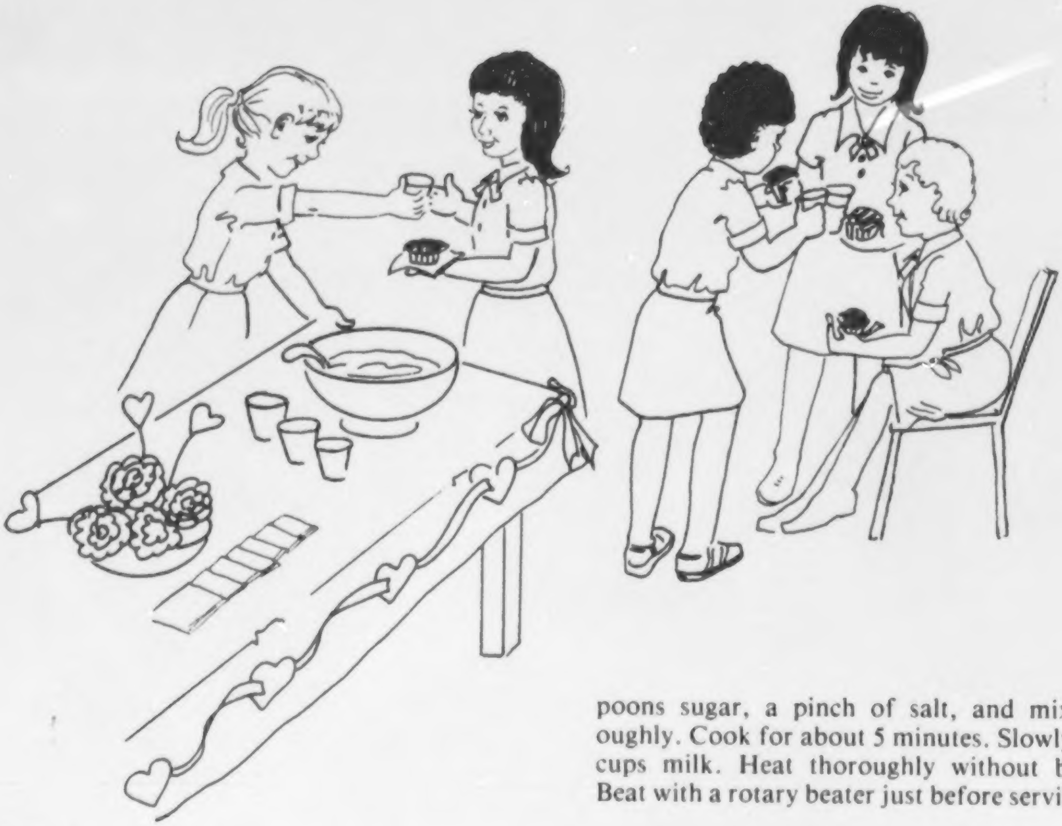
They decided they wanted a party for girl friends. They agreed to have the party on their regular meeting day rather than February 14th so that everyone invited could come. They decided to make invitations because they could make prettier ones than they could buy and save money too. They wanted to mail them because "getting mail is fun." They decided they needed a committee for decorations, another for refreshments, and one for entertainment. The decorations committee planned to make a special tablecloth and centerpiece, a decoration for the door, and a long Valentine picture for the wall. The refreshment committee planned to have a red fruit punch, popcorn balls, and decorated cupcakes. The entertainment committee planned Valentine's games and a skit. Each group gave a list of needed supplies to the leader and spent the next meeting time working on projects. The party was a success because the girls had organized it themselves.

Party Recipes

Here are some party recipes. Others are listed in the section of this guide that deals with snacks.

Cranberry Punch

Cook 2 cups of cranberries in 3 cups of water until the skins pop. Strain through cheesecloth and combine with ½ cup sugar. Cook until sugar dissolves. Let cook and add ¼ cup lemon juice, 2 cups ginger ale, or unsweetened pineapple juice. (Increase ginger ale or pineapple juice if preferred.) Chill.



Frosties

Make a simple syrup by boiling ½ cup sugar in ⅔ cup of unsweetened pineapple juice, ⅔ cup lemon juice, 2 tablespoons fresh or bottled lime juice. Just before serving, shake ingredients with 2 unbeaten egg whites and 4 cups finely crushed ice. Serve in cold juice glasses.

Spiced Tea

Tie a teaspoon of whole cloves and a one-inch stick of cinnamon loosely in a bag, and bring to a boil in 3 quarts of water. Add 2½ tablespoons tea leaves (in bag or other container). Steep for 5 minutes. Remove bags, then heat together the juice of 3 oranges, 1½ lemons, and a cup of sugar. When sugar is dissolved, combine with tea. Serves 20-25.

Hot Chocolate

Melt two 1-ounce squares of unsweetened chocolate, add 1 cup hot water, 3 or 4 tablespoons sugar, a pinch of salt, and mix thoroughly. Cook for about 5 minutes. Slowly add 3 cups milk. Heat thoroughly without boiling. Beat with a rotary beater just before serving.

Eggnog

Beat ½ cup sugar into 3 egg yolks. Add ¼ teaspoon salt and slowly stir in 4 cups of scalded milk (heated just short of boiling point). Cook until mixture will lightly coat a spoon. Cool. To 3 egg whites, add 1/8 teaspoon salt and beat until stiff. Add ¼ cup of sugar, beating constantly. Add ½ teaspoon vanilla to the custard mixture. Chill thoroughly. Serve in punch cups with a sprinkling of nutmeg. Serves 6 to 8.

Mixed Fruit Punch

Combine:
- 3 quarts unsweetened pineapple juice
- juice of 8 lemons
- juice of 8 oranges
- juice of 3 limes
- 2 cups sugar
- 1 cup mint leaves

Chill, then add:
- 4 quarts dry ginger ale

- 2 quarts plain soda water
- 1 pint fresh strawberries, washed and quartered

Serves 35.

Cooler

Mix:

- ½ package raspberry-flavored drink powder
- ½ package grape-flavored drink powder
- ¾ cup sugar
- 4 cups water
- ½ cup orange juice
- ¼ cup lemon juice
- ½ cup crushed pineapple

Makes 2½ quarts. (Try lemon and lime powders as a substitute, or grape juice in place of orange.)

Nuts

To save money, shell peanuts and pecans. Spread them in a shallow baking pan, dot with margarine, and roast at 350 degrees for about 10 minutes.

Peanut Butter Sticks

Trim the crusts from 10 pieces of several day-old bread. Cut the bread into 5 sticks of equal size. Toast bread and crusts in oven heated to 250 degrees for 1 hour. Roll the crusts into crumbs. Mix equal parts of peanut butter and salad oil, about ½ cup each. Roll bread sticks in peanut butter mixture and then in crumbs. Store tightly covered. Makes 50 peanut butter sticks.

Oat Meal Cookies

- 1½ cups flour
- 1 teaspoon salt
- 1 teaspoon soda
- 1 cup margarine
- 1½ cups brown sugar
- 1 cup granulated sugar
- 2 eggs
- 1 teaspoon vanilla
- 3 cups quick-uncooked, rolled oats
- 1½ cups raisins
- 1 cup chopped nuts

Combine flour, salt, and soda in mixer bowl. Add margarine, sugars, eggs and vanilla. Mix thoroughly. Add rolled oats, raisins, and nuts, mix to blend. Shape into rolls 1½ inch in diameter. Wrap in waxed paper. Chill overnight. Cut into slices 1/8 inch thick. Place 2 inches apart on ungreased baking pan. Bake at 350 degrees for 12-15 minutes.

Mixed Bag

- 2 cups dry unsweetened cereal (oat circles, wheat squares, or small shredded wheat biscuits)
- 2 cups peanuts or soy nuts
- 2 cups raisins
- 1 cup pretzel sticks (stand on end in a measuring cup)

Mix ingredients in a bowl and divide into a few small plastic or waxed bags. Tie with colored yarn to match color scheme of party decorations. Be creative: combine other varieties of foods, such as coconut, dates, and dried apples.

Party Cookies

Make basic cookies described in previous section. Decorate with egg yolk paint: blend 1 egg yolk and ¼ teaspoon of water. Divide mixture among several small cups. Add a different food coloring to each cup to make bright colors. Paint designs on cookies with small paint brushes. If egg yolk paint thickens on standing, add a few drops of water. See *Betty Crocker's Cookbook for Boys and Girls.*

Cheese Toast Snacks

- 1 large loaf of sliced bread
- cookie cutter
- ¼ pound margarine, melted
- 2 cups grated cheese

Cut bread into shapes with cookie cutters. Place on cookie sheet, spread with melted margarine, sprinkle with cheese, brown lightly in broiler or oven.

Muffin Pizzas

- English muffins – cut in half
- mozzarella or American cheese
- tomato sauce
- parmesan cheese

Preheat oven to 350 degrees. Top each half muffin with approximately 2 teaspoons tomato sauce, ½ slice cheese, and sprinkle with parmesan. Bake in oven for 15 to 20 minutes, or until cheese melts.

Pigs In Blankets

- cans of prepared biscuits
- Vienna sausages or party franks

Separate the biscuits. Roll each one thin enough to make 2 or 4 "pigs." Wrap one piece of biscuit around each frank and stick toothpicks through the middle. Bake on cookie sheets 8 – 10 minutes at 400 degrees. Use a rotisserie or similar oven and watch them color and rise as they bake.

Orange Balls

For 42 small balls:

- 12 ounces crushed vanilla wafers
- ½ cup frozen orange juice – concentrated, thawed, undiluted
- ¼ cup confectioner's sugar
- ¾ cup shredded coconut
- ¼ cup chopped walnuts or pecans

In a large bowl, use hands to shape ingredients into smooth, 1-inch balls. Store, while covered, in refrigerator.

Pretzel-Cheese Squares

- 12 thin pretzel sticks
- unsliced American, cheddar or other bar cheese cut in eight ½-inch squares (at room temperature)

Put a pretzel stick into each cheese square. Assemble on a plate to make various shapes, like tinker toys.

For parties, children want candy and other high-calorie foods which aren't nutritious. Here are foods they'll especially like.

"No-Cook" Fondant

- ⅓ cup soft butter or margarine
- ⅓ cup white karo syrup
- ½ teaspoon salt
- 1 teaspoon vanilla
- 3½ cups sifted confectioner's sugar

Blend butter, karo, salt, and vanilla in large mixing bowl. Add confectioner's sugar all at once. Mix first with a spoon and then with hands, kneading in the dry ingredients. Turn onto board and continue kneading until mixture is well blended and smooth. Store in cool place. Divide into portions, add color or flavor as desired. Dip into chocolate, roll in colored sugar, decorate with pecans, stuff with dates – whatever's desired.

Peter Pan Fudge

- ¼ cup peanut butter
- ¼ cup cocoa
- 2 cups sifted powdered sugar
- 2 tablespoons cream

Sift together cocoa and sugar. Add peanut butter and cream. Mix and knead. Add more sugar if necessary. Shape into a roll 12 inches by 1½ inches, and wrap in waxed paper. Slice as desired.

Frosted Grapes

Beat 2 egg whites until stiff. Dip grapes in egg whites, then in sugar. Dry on waxed paper.

Decorated Ice Cubes

Place pineapple wedges, cherries, grapes, carrot rings, raisins, etc., in compartments of ice tray or other shaper. Freeze.

Deviled Eggs

- 6 hard cooked eggs
- ¼ cup mayonnaise or salad dressing
- ¼ teaspoon dry mustard
- ½ teaspoon salt
- dash paprika

Make and shell enough hard-cooked eggs ahead of time so the children may each eat one. The children can help cut the eggs lengthwise (with a blunt edge or plastic knife) and remove the yolks. Mash the yolks in a small bowl. Add mayonnaise, salt, and mustard. Let the children stir. Fill the egg with the mixture and sprinkle with paprika. Children may want to make faces with cereal, pimento, peas, or beans.

Stuffed Celery

Ahead of time, scrub and trim crisp celery stalks cut 3-4 inches long. Let the children help mix ½ cup creamed cottage cheese with ¼ cup grated raw carrots (prepared ahead of time), and 2 tablespoons chopped, seedless raisins. Stuff into celery stalks. The children also may stuff celery with ½ cup pasteurized cheese spread, mixed with 2 teaspoons drained sweet pickle relish.

Frito Pie

* Dutch oven
* 2 pounds hamburger
* 2 pounds canned ranch style beans
* 2 8-ounce cans tomato sauce
* 1 can water
* 1 onion diced
* 2 tablespoons fat
* 1 bell pepper
* ¼ pound grated cheddar cheese
* 1 large bag of fritos

Melt fat. Add diced onions and bell pepper. Cook until tender. Add meat and brown thoroughly. Add tomato sauce and water. Let mixture cook until bubbly. Add the ranch style beans. Sprinkle cheese in center of mixture. Crush fritos and arrange around sides of pan. Serve immediately.

Crown Roast of Franks

Using a heavy needle, run a strong string through 2 dozen frankfurters about an inch from one end, and another string about an inch from the other end. Tie the strings so the franks form a circle when standing on end.

Then make hot potato salad to fill the "crown" of franks. Boil 10 medium-sized, unpeeled potatoes. Then peel and cut into large cubes while still warm. Fry 10 strips of bacon, cut into ¼-inch pieces. When crisp, remove skillet from heat and add a cup of vinegar, ¼ cup water, and 4 tablespoons of sugar. Reheat.

Meanwhile, scatter a chopped onion over the potatoes, salt and pepper to taste, and pour on the hot bacon-vinegar mixture. Mix well.

Fill the "crown" of franks with the hot potato salad, and put into a 350 degree oven to cook until franks are done – usually not more than 10 minutes. Serve hot.

Outdoor Snacks.

Plan with the children. Let them choose a good spot and decide what should be done ahead of time. Use a table or workspace large enough to work with the ingredients and the utensils. If preparing snacks in the afternoon or on a hot day, set up in the shade. Washing hands, taking turns, and other details should be talked about in the planning session. There are lots of snacks that can be prepared outdoors. School-agers will have many suggestions. Here are some ideas.

Snack Pies

Crust: (each child makes one)
- 1 graham cracker
- 1 teaspoon sugar
- 1 teaspoon soft butter or margarine

Put graham cracker in double sandwich bag (2 thicknesses makes it sturdier). Crush the graham cracker to fine crumbs, using a rolling pin (dollar size is fine) or the back of a spoon.

Pour the crumbs into a custard cup, pot pie tin, paper cup, or muffin tin. Add sugar and stir. Add soft butter or margarine. Pack crumbs into the bottom of container to be used. Fill with instant pudding and pie filling.

Filling: (enough for 5-6 pies)
- 1 package instant pudding, any flavor
- 1 ¾ cup milk

Pour milk into bowl. Add pudding mix. The children can help stir. Beat with a rotary beater for about a minute. Spoon into graham cracker pie shells. (Each child may make a filling by combining 1 tablespoon of instant pudding mix powder with ¼ cup milk.) Allow pies to set, preferably for 30-60 minutes. They must be refrigerated unless they are to be eaten within a 30-minute period. Or, the pies may be eaten from the containers if the children can't wait. In that case, let them set about 5 minutes.

Banana Shake

- 1 small rip banana, sliced
- ¼ teaspoon vanilla
- ¾ cup skim or whole milk
- 1 teaspoon sugar
- 1 ice cube

Mash the banana slices with a fork in a small bowl. Place ingredients into a clean glass jar, tightly covered. Shake until the milk is frothy.

Other Fruit Shakes

For the banana, subtitute:
- ½ cup fresh strawberries,
- ½ cup apple sauce, or
- ½ cup sliced peaches.

Humpty Dumpty Egg Salad

On each plate, place a leaf of lettuce, then a thick slice of tomato slightly salted and slightly hollowed out in the middle. Fill with mayonnaise. Peel a hard-boiled egg and place it, small end up, into the hollowed center of the tomato slice. Make eyes and nose with cloves and small sticks of carrot or celery. A small piece of pimento makes the mouth.

Raggedy Ann Salad

- body – peach half (canned)
- arms and legs – celery sticks
- head – marshmallow or ½ hard-boiled egg
- eyes, nose, shoes, buttons – raisins
- hair – shredded carrot or cheese
- skirt – lettuce

Arrange on paper plate.

Put out a variety of ingredients so each child may create a salad. Many vegetables are delicious raw and provide interesting colors and shapes. Try some of these:

- spinach leaf or any other green
- leafy vegetable
- cabbage leaves
- tomato wedge
- cauliflower floret
- broccoli floret
- yellow squash
- zuchini squash
- mushrooms

Arrange on plate:

- turnip slices
- carrot sticks and curls
- celery sticks
- radish slices or roses
- cucumber slices
- green pepper slices

See early part of this section for individual fruit salad and carrot salad recipes.

Spicy Apples or Oranges

Stick whole cloves into the fruit. Keep in a cool place for several days before eating.

Melon Balls

* cantaloupe
* watermelon
* honey dew melon

Have enough fruit balling-tools for several children to scoop at once. Each child may choose a combination of melons.

Plump Raisins (Or Other Dried Fruit)

Put raisins, dried apples, peaches, or apricots into a cup. Cover with orange juice or water. Let soak for several hours. Observe the swelling before eating.

Shake 'M-Up Bars

* 1 cup enriched flour
* 1½ teaspoons baking powder
* ½ teaspoon salt
* 2 eggs
* ½ cup sugar
* ½ cup oil
* ½ cup orange juice

May be mixed outside but must be baked in the oven. Grease 7-inch by 11-inch baking pan. Preheat oven to 375 degrees. Stir together flour, baking powder and salt. Set aside. Break each egg into small dish. Slip eggs into 1-quart jar with tight fitting lid. Cover and shake 10 times. Add sugar, oil, and orange juice. Shake about 20 times or until blended. Add flour mixture and shake about 40 times or until smooth. Pour batter into greased pan. Bake in preheated oven at 375 degrees 20 to 25 minutes, or until cake pulls away from sides of pan. Cool on wire rack.

Peanut Butter Chews

* 2½ cups nonfat dry milk
* 1 cup peanut butter
* 1 cup corn syrup or honey

Stir ingredients together. (Mixture stiffens as mixed so an adult may have to finish stirring.) Roll into small balls. Recipe makes approximately 4 dozen 1-inch balls.

Stuffed Celery

Scrub and trim crisp celery stalks. Cut these 3-4 inches long. Let the children mix a cup of creamed cottage cheese with ½ cup chopped, seedless raisins. Use a heavy, large mixing bowl and spoon. Mix until creamy. Tongue depressers, small plastic knives, or ice cream spoons may be used to put the stuffing on the celery.

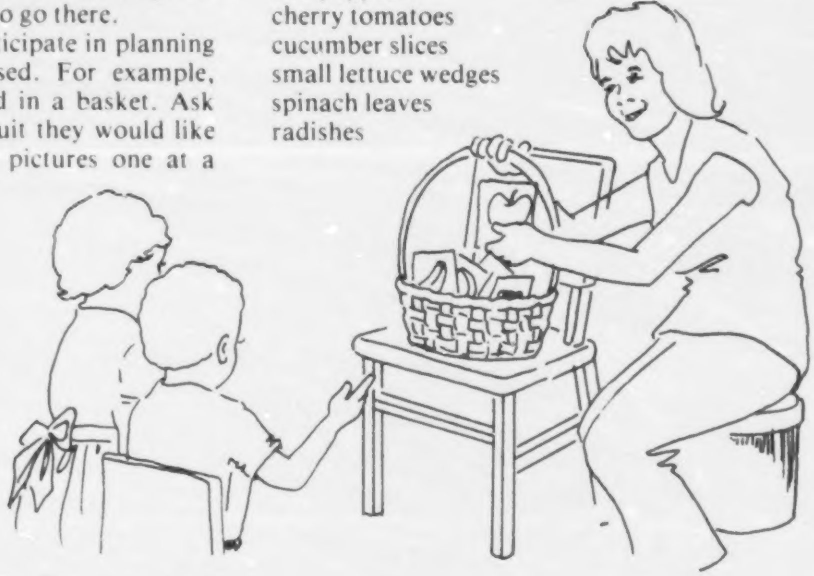
Picnics

How about taking the school-agers on a picnic? It can be an exciting break from daily routine and give children chances to learn about food and discover insects and plant growth. Take the day care cook. The children will enjoy giving the cook a meal.

Planning A Picnic

There are several ways to introduce the idea of a picnic. Read a story or tell the children about a personal experience. Discuss where to go with them. If a park is within walking distance, the group may decide to go there.

Even shy children will participate in planning if a little imagination is used. For example, place pictures of picnic food in a basket. Ask the children what kind of fruit they would like to take while removing the pictures one at a time.



Are there enough sacks for everyone? Probably everyone will want to decorate a personal sack. Bread wrappers and cellophane work well.

Consider taking milk in an ice chest. An adult might also carry a first-aid kit if the picnic is away from the center. Finally, discuss what to do besides eating. Consider a walk, observing ants, or looking for different colored flowers.

Picnic Food

Children enjoy eating with their fingers. Examples are given below. Many of these could be used on a picnic. Others could be used as daily meals and snacks.

Fruits

apples
orange slices
seedless grapes
banana halves (with peels)
fresh peach halves
fresh pear halves
dried apricots
raisins
prunes

Vegetables

carrot sticks or curls
celery stuffed with cheese or peanut butter
raw cauliflower bits
bell peppers
cherry tomatoes
cucumber slices
small lettuce wedges
spinach leaves
radishes

Meats and Alternates

pieces of fried chicken
weiners
vienna sausages
cheese cubes
fish sticks
steak fingers
meatballs
bacon
link sausages

Breads, Snacks, Desserts

sandwiches of any type
crackers
cookies
cupcakes
fruit juice popsicles
muffins
small bread-and-butter sandwiches
pigs-in-a-blanket

Think of other finger foods for a picnic. Here's a sample menu:

cluster of grapes
carrot sticks

celery stuffed with peanut butter
tuna sandwiches, quartered
orange cupcakes
½ pint milk

Let the children make sandwiches. Cut bread slices in half. Use different kinds of bread: rye, pumpernickle, whole wheat. Have a variety of sandwich fillings.

9. A Food Related Project: An Hawaiian Luau

Activities other than food preparation might relate to a given food. A series of activities could last for several days, depending on the children's interest.

For instance, having a Hawaiian Luau is a good way to study and prepare pineapple.

Study Hawaiian customs before planning the luau with the children. Reading the encyclopedia will give a feel for the flowers, music, dancing, and food enjoyed in the Islands. The children also may want to do research. A travel agency might have colorful posters to give away or sell cheap. Check grocery stores and magazines for pineapple advertisements which include Hawaiian scenes.

The Language

The Hawaiian language sounds musical. Maybe that's why children learn the words quickly and enjoy using them.

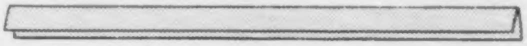
Mix a few Hawaiian words into the daily day care conversation. Here are a few to start with. Notice how each letter is sounded.

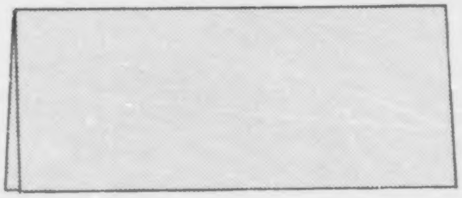
	pronounced	*meaning*
ai	ah ee	eat
aloa	ah LOH hah	welcome, goodbye, and love
hula	HOO lah	dance
lei	lay	wreath or flower necklace
luau	LOO ah oo	feast
mahalo	mah HAH loh	thanks
kane	KAH nee	boy or man
wahini	wa HE nee	girl or woman
hukilau	WHO kee la oo	fishing party

Hula Skirts

Originally, hula skirts were made of long grass or palm leaves knotted around a cord waistband. Or, when cloth was used, skirts were made by pounding bark into a felt-like sheet called "tapa cloth."

The waistband is made of sturdy cloth about 6 inches wide and long enough to tie around a child's waist. Fold it lengthwise.

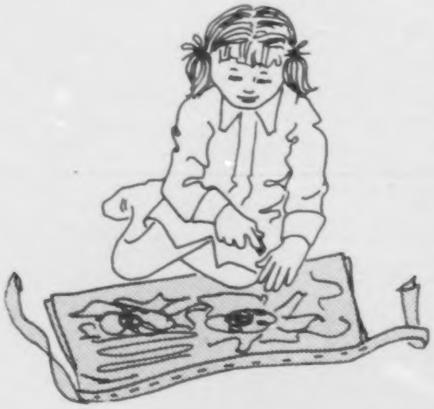




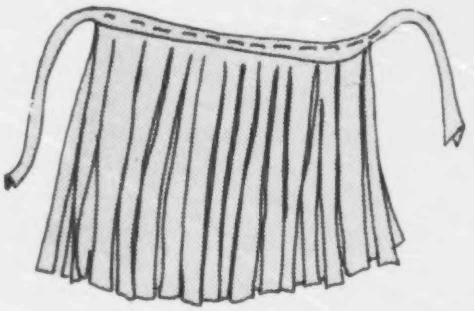
The skirt is made of a double thickness of strong paper. Measure the child from waist to knee to determine the length of paper needed.

Insert the paper into the fold of the waistband. The latter should extend beyond each end of the paper. Staple together.

The children can decorate the skirts with crayons or paint. It's easiest to lay the skirts on the floor or spread them on a table while working.



Cut the paper into strips, starting at the bottom and cutting almost to the waistband. The children may do the cutting if they are skilled enough.

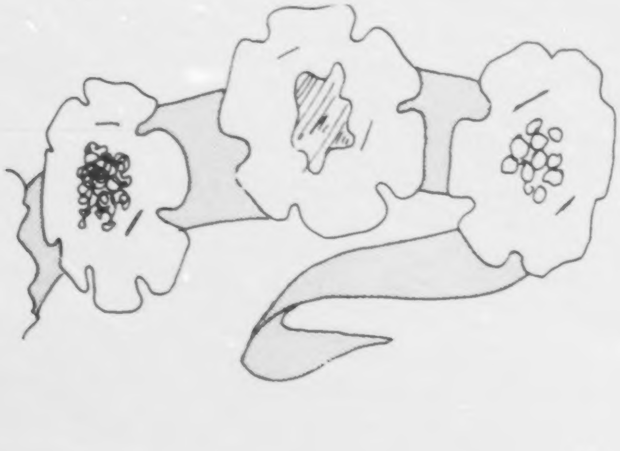


If the boys think skirts are only for girls, suggest they make a wrap around to cover their shorts, called a "lava-lava." Cut a strip of a sheet or similar fabric which is long enough to cover short pants and wide enough to wrap around the waist. Tuck it in on one side. Decorate it with crayons or paint so it looks like tapa cloth.

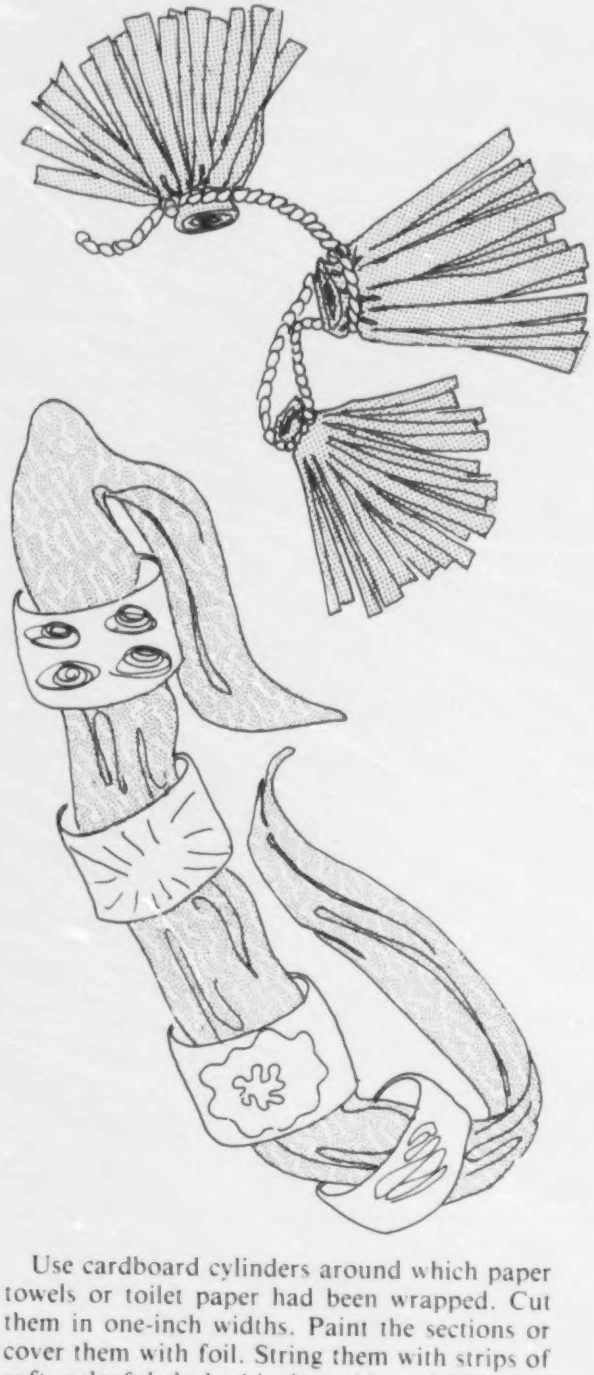
Leis

Leis are garlands or wreaths usually worn as a necklace but sometimes wrapped around the head or used as a hat band. In the Hawaiian Islands, fresh flowers are strung together to make leis. Or shell, seeds, feathers, and bits of coral are used. Leis often are given to show friendship. They are used as welcoming or farewell gifts and to celebrate special occasions. They can be made in several ways.

Cut flowers from cardboard. Paint them and staple them to strips of bright cloth several feet long.



Cut fringes on pieces of colored paper. Roll and tie them to make tassels. Join the tassels to make the lei.



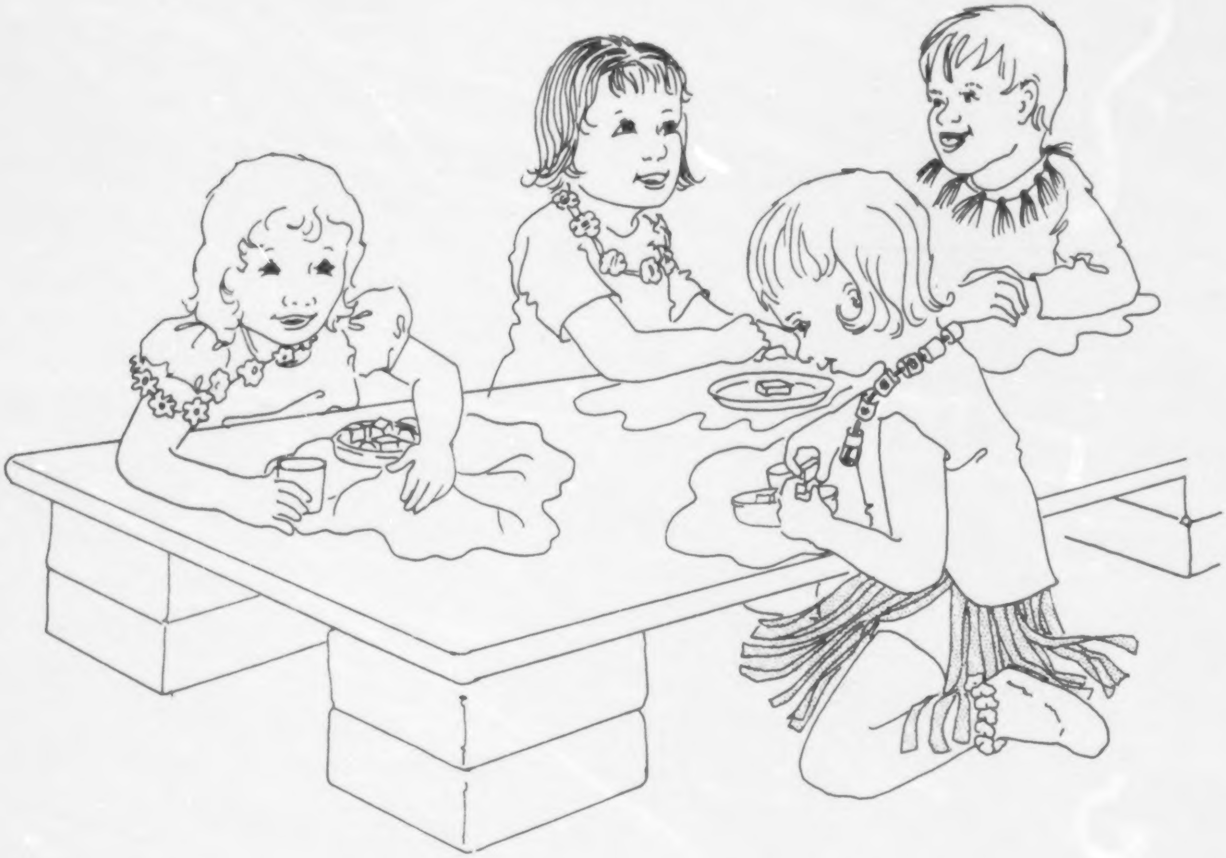
Use cardboard cylinders around which paper towels or toilet paper had been wrapped. Cut them in one-inch widths. Paint the sections or cover them with foil. String them with strips of soft, colorful cloth, 4 inches wide and 36 inches long.

Another easy way to make a lei is to thread heavy string through paper or plastic flowers.

Eating At The Luau

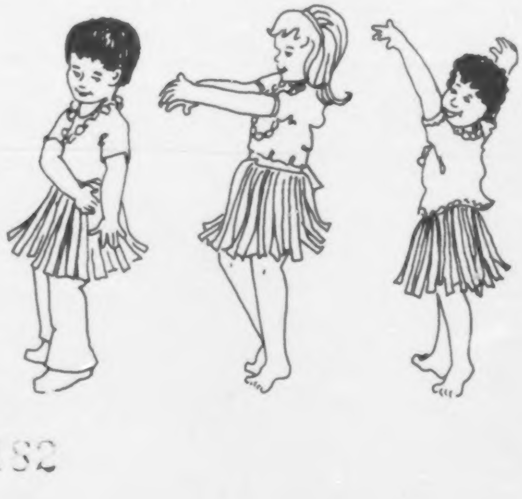
Sit on the floor or a pillow. If possible, eat off a big hollow block, a cobbler's bench, or a table made by placing boards across boxes or tires. Cover the table with leaves or make leaf-shaped place mats. Let the children do as much of this preparation as they want. Some may want to dress up and look for special places to eat. For dishes, use plastic lids, small foil pie tins, foil covered bric-a-brac, or shells.

Serve tiny wedges of fresh pineapple and banana slices. Use colored toothpicks for serving and eating. Open-faced peanut butter sandwiches also are appropriate.



Dancing to Hawaiian Music

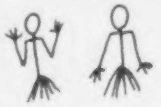
Hula dancing is popular with school-agers, especially if there's someone to demonstrate the dance. The dance includes hip rhythm and a shuffling step. Graceful movements of arms and hands demonstrate stories, flying birds, falling rain, and rippling waves. The costumes are fun, too. Buy a Hawaiian record, such as "Hukilau," for singing and dancing. Nondancers can pretend to be musicians. Here are the meanings of some hula motions:



Throwing Out Nets

Begin: Arms bent, hands at shoulder height, palms out.

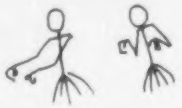
Next Movement: Arms straight out in front, palms down.



Pulling In Nets

Begin: Arms straight out in front, hands grasping net.

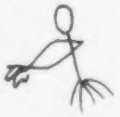
Next Movement: Arms bent with hands "grasping," close to chest.



Fish Swimming

Begin: Arms straight out, hands one on top of the other, palms down, thumbs sticking straight out.

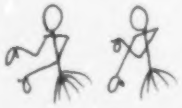
Next Movement: Only thumbs move, wiggling to represent fins.



Waves

Begin: Arms in front, slightly bent, hands palm down.

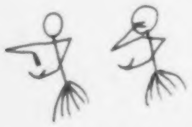
Next Movement: Hands wave up and down alternately.



Eating

Begin: Left elbow bent, hand cupped palm up. First 2 fingers on right hand extended.

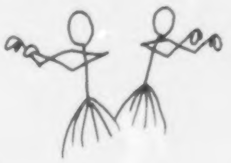
Next Movement: Extended fingers scoop food from left hand to mouth.



Basic Motion fills in between other motions)

Begin: Arms at shoulder height, straight to one side, thumb and fingertips together. Fingers slowly open and close.

Every 4 beats of music, arms move across body to be extended in opposite direction. Repeat.



Riddle Songs

Hawaiian children like riddle songs. See how many the school-agers can make up.

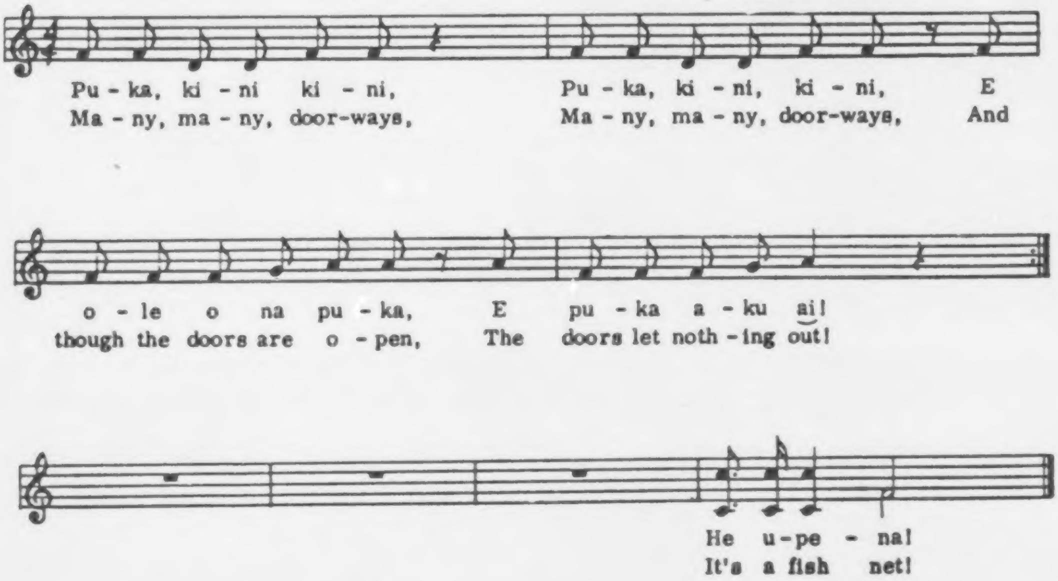
One group sings the riddle and another group shouts back the correct answer.

Note: There are only 12 letters in the Hawaiian alphabet. The vowels are A, E, I, O, and U, and are pronounced as follows:

A as in father
O as in lone
E as the "a" in cane
U as the "oo" in look
I as the "ee" in week

FISH NET RIDDLE

by Robert Graham


Pu - ka, ki - ni ki - ni, Pu - ka, ki - ni, ki - ni, E
Ma - ny, ma - ny, door-ways, Ma - ny, ma - ny, door-ways, And
o - le o na pu - ka, E pu - ka a - ku ai!
though the doors are o - pen, The doors let noth - ing out!
He u-pe - na!
It's a fish net!

(Reprinted by permission of Choristers Guild, Dallas — Copyright 1970.)

10. Health and Safety While Cooking

Planning is especially important for cooking activities because great care is needed with the food, the cooking tools, and the heat. How large a group can be handled safely? Do the children know how to use tools safely? Go over safety rules with the staff and the children before starting an activity.

Cleanliness

- Sterilize dishes and utensils according to local health regulations.
- Don't attract flies and roaches. Always clean up spills and crumbs immediately.
- Put garbage in containers with tight lids.
- Handle food with clean hands.
- Keep foods in closed containers or wrapped when they're not being prepared, served, or displayed. Foods which have been on display should be cleaned afterward.

Fresh Ingredients

- Check the color.
- Check the smell.
- Fish, chicken, ground beef, and pork do not keep well. Eat them the first day or two or else freeze them.
- Check bread for mold (grey or green spots).

Knives and Other Sharp Cooking Tools

- Wash knives by themselves. Don't put them where they might not be seen.
- Use a broom or brush to sweep up broken glass, not fingers.
- Use a small knife for paring. Use large knives for chopping and slicing.
- When slicing, cut outward.
- Use a can opener that makes a straight cut. Don't use a can opener that makes sharp points. Can lids are sharp so be careful when handling them.

Heat

- Use a thick insulated pot holder to pick up hot pans and dishes.
- Pull out the oven rack to reach hot pans in the oven.
- For cooking, use wooden spoons and forks with long handles. Metal handles become too hot to hold.
- Don't leave the area where cooking is being done. Watch the stove, so a pot doesn't boil over or grease catch fire.
- Turn pot handles toward the back of the stove so pots don't get knocked over.
- Don't touch electric burners right after they're turned off. They stay hot a long time.
- Careful adult supervision always is necessary where food is being heated.

Electric Appliances

- Don't touch an electric appliance with wet hands.
- Don't run electric cords under rugs or over pipes.
- Don't use an appliance which has shocked someone.
- If an appliance is broken, have it repaired professionally.
- Unplug an appliance by pulling on the plug, not the cord.
- Don't plug too many electric cords into one outlet.
- Don't put a knife into a plugged-in toaster.

Gas

- Be alert to the smell of leaking gas. Don't light a match where there's the smell of gas.
- If the stove has burner pilot lights, make sure they're not out.
- Light matches before turning on burners or the oven.

Putting out a Fire

- Keep a small fire extinguisher in the kitchen.
- Don't use water on grease fires. Water will cause an explosion.
- If a frying pan catches fire, put a lid over it. Don't try to carry a burning pan out of the house.
- For a fire in the broiler:
  1. Close the broiler door to keep the air out.

2. Turn off the heat in the broiler.
3. Find a box of salt or baking soda.
4. Open the broiler with a pot holder.
5. Throw salt or baking soda on the fire.
6. Close the broiler until the fire is out.
7. If the fire can't be put out quickly, call the fire department.

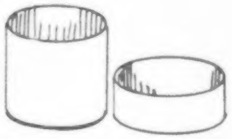
11. Aids for Food Activities

Utensils

Some utensils can be made by the children. Making them can be a learning process involving science and math. The children will have inexpensive and useful utensils to use at the center or to take home, and the money saved can be spent on other equipment.

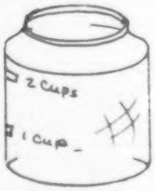
Baking Pans

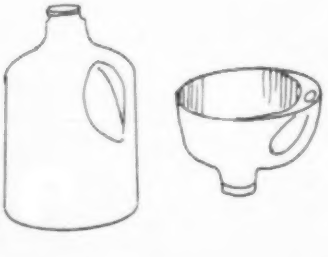
Rust-proof cans such as vienna sausage or tuna fish cans are good for baking. Grease, flour, and fill them ⅔ full.



Measuring Container

Use a measuring cup to make other measuring devices. Fill the cup with water. Pour the water into a clean glass jar and mark the water level with tape. Fill the cup a second time and pour the water into the jar. Mark the second level. (See illustration.)



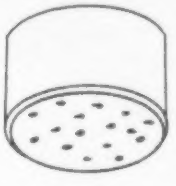


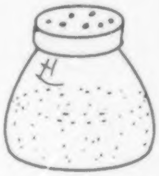
Funnel

Using a sharp knife or tin snips, cut the top section from a clean plastic bottle. Turn it upside down to use as a funnel. Use the bottom part of the bottle for storing things.

Strainer

With a sharp ice pick, punch holes in the bottom of a plastic bottle. Don't use it over a fire – the plastic will melt.



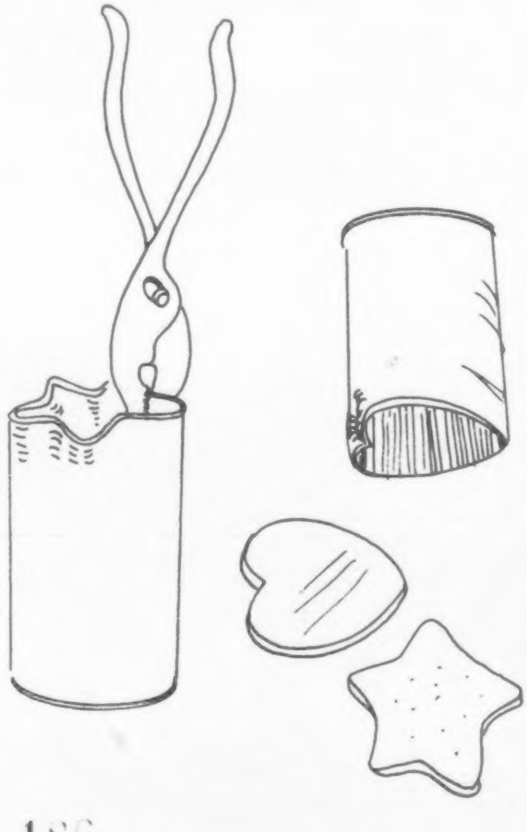


Salt Shaker

Punch holes in the lid of a small jar with an ice pick or other sharp instrument. Fill the jar with salt (or cinnamon, sugar, etc.).

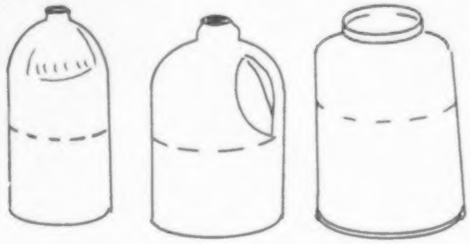
Cookie Cutters

The cutters shown here are shaped with pliers from metal juice cans which hold 6 ounces each. It's unnecessary to reshape the can to cut biscuits.

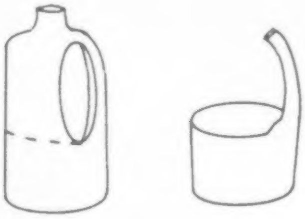


Mixing Bowls

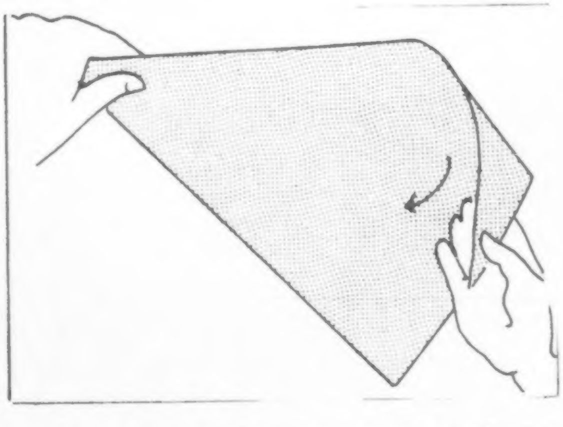
Make a set of mixing bowls by using the bottom sections of different sized plastic bottles. Wash the bowls with hot soapy water.



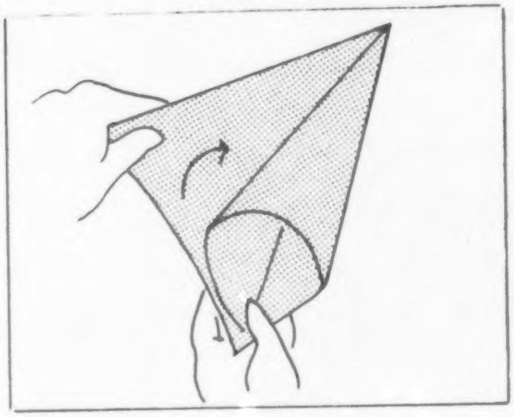
Cold liquids such as lemonade can be served with a ladle made from a plastic bottle.



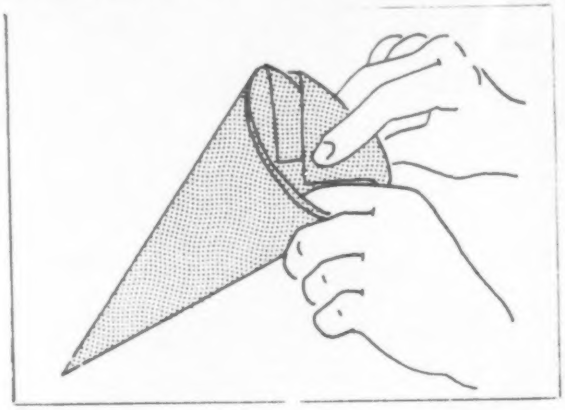
Bags to Use for Icing



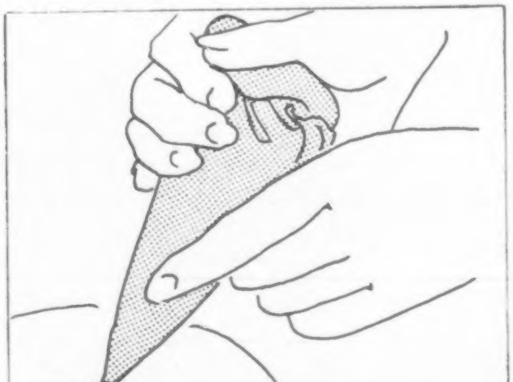
1. Use a piece of strong grease-proof paper (freezer wrap) about 10 inches square. Cut diagonally into 2 equal triangles. Hold a triangle as shown (A) and roll the point with the right hand to form a cone.



2. Bring the point in the left hand over and around, as shown.



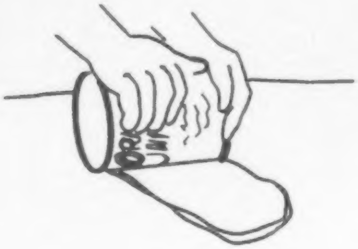
3. Tuck in the projecting paper at the top of the cone, as shown. Cut a very tiny piece from the point of the cone.



4. Half fill the cone with icing. Fold the top closed. Hold the cone as shown, squeezing gently so that the icing flows smoothly from the point.

Rolling Pin

An unopened juice container can be used as a small rolling pin.



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for School-agers

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G. Science and Nature

1. Overview

For school-agers, science is sprouting seeds from the orange eaten at snacktime and watching them develop. It's finding an insect, observing it, then letting it go. It involves doing and thinking.

Humans also are a part of the natural world, and children might consider their role in the scheme of things.

Science has to do with information and discovery. It involves asking, examining, testing, taking apart, investigating. Science is drawing conclusions and making generalizations. Discoveries yield facts and conclusions which can be organized to help us understand ourselves and the world.

Language skills are encouraged through science activity. Learning new words, classifying, labeling, and recording are verbal skills.

Nature study has to do with balance and interdependence.

Knowledge contributes to a healthy self-concept. It fosters confidence. Fear comes from a lack of understanding. Some children fear snakes or insects, thunder and lightning. But with the attention and support of an unafraid adult and an understanding of whatever is feared, the child can cope. Science teaches caution based on knowledge and experience.

Social growth can be encouraged through science projects. Group projects are common – many experiments are at least two-person jobs.

With natural curiosity, children easily discover the materials of science, but they need interested adults to help them make sense out of what they find.

Three methods may be used in science programs.

1. The Discovery Method

Encourage school-agers to investigate things. Provide thermometers, tape measures, magnifying glasses, and other measuring and perception devices.

Encourage them to ask questions and seek answers. The teacher may give general direction to the activity, and suggest discovery methods: "Compare the weight of a feather and bone to that of a cup of sand, a piece of string, a heavy bolt and nut." Or: "Close your eyes and try to determine what the bird's nest is made of. How does a bird build its nest without hands?"

2. The Interpretive Approach

An interpreter explains the scientific method. The interpreter may be an adult staff member, a visitor, one of the school-agers, or anyone with a special knowledge or interest. This approach is best used in combination with the discovery method. One child might become interested and wish to share knowledge. But lecturing the children is a quick way to lose their interest.

3. The Project Approach

School-agers work as a team. Projects may be dreamed up or developed as an outgrowth of discovery and interpretation. Adults may help, but only where they're needed.

2. Trees

Adopting A Tree

People in day care frequently become close friends. It's possible to have the feeling of closeness to nature, too. One way is to adopt a tree. A tree gives shade and protection from the wind. Because trees give off oxygen and take in our waste carbon dioxide, they provide fresh clean air and a healthier place to live. A tree can provide a home for a squirrel or a nest for baby robins, sing with the wind, and scratch an itchy back.

First, choose a tree the group wants. How about a pecan tree? It is the official State Tree of Texas. Make sure the tree is strong and healthy. Give some thought to its location – can it be seen from a window?

Portrait of the New Family Member:

Place newsprint or other thin paper onto the tree bark and gently rub the surface with a crayon. Inside, sponge the entire paper with a contrasting color of paint. The crayoned area will resist the paint, leaving a line picture of tree bark – a batik.

Rubbing Leaves:

Pick a variety of leaves. Be careful to grasp the stems between the thumb and finger and pull or snap gently. The leaf will come off easily. Do not break the wood of the twig or stalk of the plant.

Arrange the leaves on a table and carefully place newsprint paper over them. Holding the paper firmly, rub a crayon over the surface. To see the outline of the leaves in great detail, use a lithograph crayon, available at an art supply store. Try chalk, soft lead pencil, charcoal, and other types of paper.

Size of Tree:

How big is the tree? Can someone hug it and have fingers touch on the other side of the tree? If not, several children could hold hands and circle the tree. How many people are needed? To get a first-hand feeling for the tree's size, compare it to the size of those who are adopting it.

Wrap a rope around the tree. Stop when the ends of the rope meet. Measure the section of rope with a ruler or yardstick. How many feet around is the tree? How many meters? Comparison is an important step in gathering knowledge. It's a way to identify things.

Stand in the tree's shadow. Whose shadow is longer? Try this at different times of the day. Ask friends to help cover the tree's shadow if necessary. What time of day does it take the most people to cover the shadow? Trees block out the sun. Trees in the yard make for a cooler house, less air conditioning, lower utility bills. In winter, trees protect the house from cold winds.

The Tree's Inhabitants:

Look to see who is living in the tree. What about birds, squirrels, moths, skunks, chipmonks, snakes, racoons, caterpillars, bees, wasps, fungus? Carefully lift a section of bark. Are there ants, termites, grubs, snails, spiders? Keep a record of everything that lives on or visits the tree. Could children live in the tree? And eat grubs and worms, ants and nuts, leaves for breakfast?

Offspring:

Does the tree produce flowers? Do they have an odor? What about fruit – how does it taste? (Be sure that the fruit is safe to eat.) Where are the seeds? Draw a picture of the seeds and how they travel. Do they fall to the ground, blow in the wind, get picked by birds and then dropped?

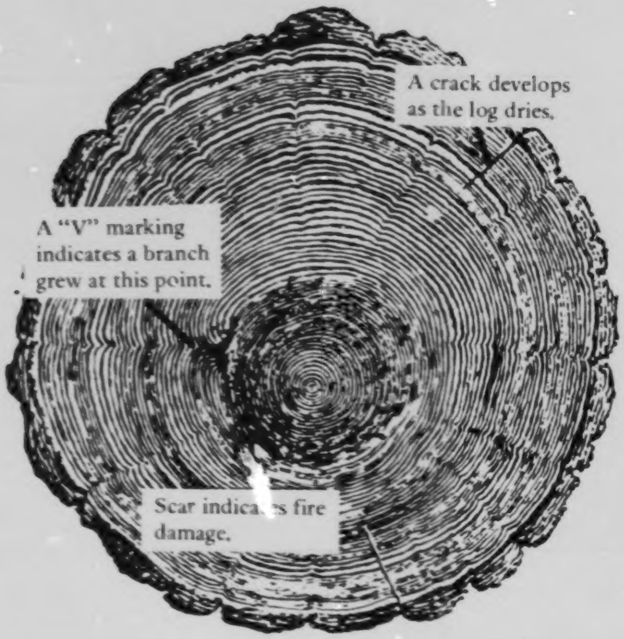
Gather some of the tree's seeds and plant them. If they grow, keep a record. Ask a local nursery about the best soil and care for the young tree.

Facts About Trees

A tree is a woody plant at least 12 feet tall with a single main stem or trunk and a crown of leaves. There are two major types:

1. Coniferous
   - Most conifers have needle-like leaves.
   - They bear their seeds in cones.
   - They're evergreens – they shed their leaves gradually all year long.

2. Flowering
   - Flowering trees have broad leaves.
   - They are deciduous; that is, they shed their leaves all at once.


A crack develops as the log dries.
A "V" marking indicates a branch grew at this point.
Scar indicates fire damage.

A tree's cross section tells not only a tree's age (each ring equals one year) but also much of what has happened to it.

Watch to see which leaves fall in autumn. Why do they fall? Some leaves turn bright colors before falling. Why? What part of the United States is famous for the colors of fall leaves? Leaves will turn brilliant colors after the first very cool (not quite freezing) night. In New England, this time comes early enough to make the hills glow with fall splendor. This is called "Indian Summer." Such a color change happens because frost kills leaves - they are dead or dying; chlorophyll is no longer being made. The green disappears gradually and the less dominant color pigments show for a brief time.

During the summer, trees and other green plants make food: a sugar called "glucose." The process is called "photosynthesis," a word derived from two Greek words meaning "put together with light." It's not fully understood how photosynthesis works, but green plants use water from the soil and carbon dioxide from the air (thus keeping air clean of the CO_2 which is a waste product of our breathing). With sunlight, the plants change these substances into sugar, then change the sugar into needed protein, fats and carbohydrates. The process produces chlorophyll, which makes plants green. Oxygen also is produced.

Photosynthesis takes place in the leaves of the tree. The top layer is waxy to protect against too much moisture absorption. That's why water makes tiny beads on green leaves. The underside is not waxy. It is through this side that the plant breathes and gets moisture. The two inside layers contain the chloroplasts which make sugar from water and carbon dioxide.

Branching off from the spine of a leaf are the veins which carry nutrients to and from the rest of the tree. They work like human veins and arteries which carry oxygen to hearts and lungs.

Plants make food for themselves, and indirectly for nearly all living things, since every animal either eats plants or insects, or animals which eat plants. Plants are the source of the food we eat and the oxygen we breathe. Like all animals, we are nourished by plants.

Planting a Tree

Shade, wind protection, beauty, learning experiences, and to increase property value are reasons for planting a tree.

Discuss where it should be placed, how to protect, water, and feed it. Discuss how long it will take to grow into a large tree. Look at mature trees - near the center some are 200 years old.

After deciding on a spot, soften a small area with water, spade the soil into an old bucket or onto a piece of heavy plastic. Add more water to the removed soil to soften it more. When the tree is placed into the hole, use this soft soil to fill in around the tree.

Note: There are good times and bad times to plant a tree. It depends on the kind of tree. Consult a local nursery about timing.

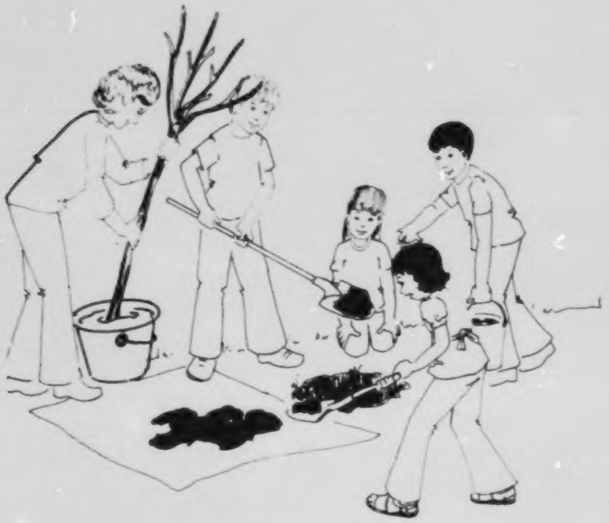
Suggestions

1. Decide where the tree is to be planted, where it'll provide the most useable shade, where it'll make a good windbreak.
2. Determine the kind of tree best suited to the area. Consult a county agent. Explain where the tree is to be planted so the agent can give appropriate suggestions. A fast-growing tree is desirable, one that will not splinter easily when it has grown large enough for children to climb.

Be sure the tree does not have poisonous berries, fruit, or leaves.

3. Purchase the tree from a reputable nursery. Trees five to 10 feet tall bare root, and are the best size. Have the tree pruned and ready for planting, or find out how to prune it. Sometimes directions for pruning and planting are fastened to the tree.

4. Dig a large hole, at least three to four feet deep and three feet across. Spread the tree roots out loosely in the hole.

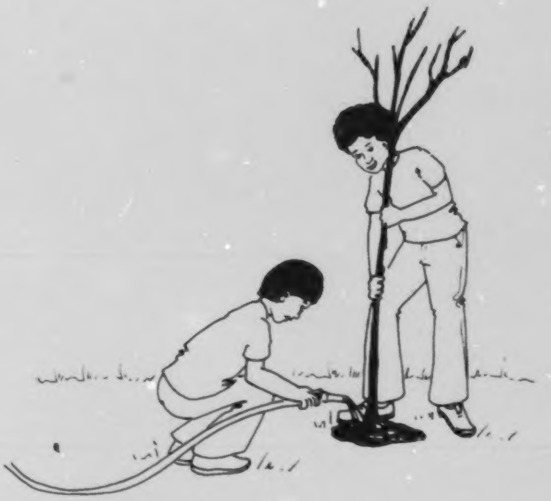


5. Soak the roots in a pail of water for at least 30 minutes before planting.

6. The loose soil may be mixed with compost, or with rotted leaves. When the hole is dug deep and wide, put a 12-inch layer of soil into it. Remove the tree from the pail of water and spread the roots out over the layer of loose soil. Cut off any broken roots.

7. It's important that the tree be planted the proper depth. All roots should be covered with dirt to the depth at which they were originally covered. Have someone hold the tree at the proper height while shoveling the soil, spreading out the roots, and pressing down the soil firmly. Meanwhile, have the hose running slowly into the hole.

8. When the hole is full, walk on it to pack it. Leave a slight hollow in the soil around the tree and soak it well with the hose.



9. To prevent the wind or an energetic child from bending the tree, drive 3 or 4 stakes into the firm ground around the tree and tie the tree in place with strong wire or rope. Pad the rope or wire where it touches the trunk so it won't rub off the bark and injure the tree.

3. Growing Plants

Growing plants can be rewarding for schoolagers. When they learn that proper attention results in healthy growth, they'll want to care for plants. Curiosity about what makes plants grow will lead them to learn about photosynthesis, and the effects of water, air, fertilizer, and soil on plants.

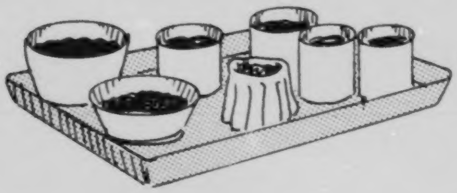
The flowering of a plant helps the child understand reproduction. And the child comes to realize that the end of the plant's life cycle is the way of nature.

Most non-poisonous plants referred to in this section are used as food by man or other animals. The section deals with vegetables because of the interest people have in growing food.

Sprouting Seeds

Make seed sprouting and growing plants an on-going indoor activity, even if there's a garden outdoors. Most plants can be transplanted into an outdoor garden once they are well rooted, if outdoor conditions are right.

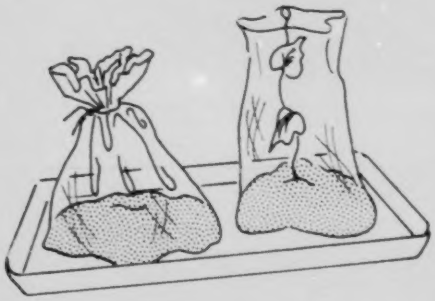
Recycle used paper cups, cans, plastic bottles etc., or buy small containers for sprouting seeds. Make a drainage hole in the bottom of each container. Set it on a tray or bowl to catch the water that drains out.

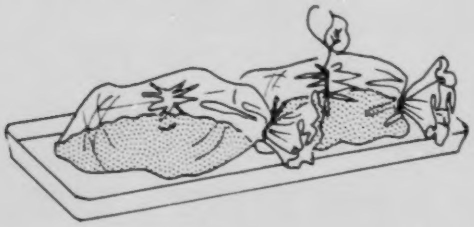


Plastic Sack Seed Starter

Fill plastic sandwich bags (two sacks, one inside the other if they are flimsy) with sand and rich dirt, purchased planting mix, or a mixture of vermiculite, peat moss, and sandy loam used by commercial growers.

Sacks may be set up or laid down, depending on the size of the seeds and the area.



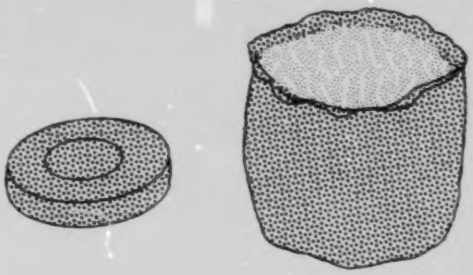


Poke a little hole or two in the underside of each sack for drainage. Teach the children to blow gently into each sack as sprouting begins. (We breathe out the carbon dioxide plants need; plants release the oxygen we need.)

Place sacks on a tray or pan to catch drainage.

Planter Pellets, Peat Pots, Prepared Containers

These have been developed for plant growth and save time and energy. But they cost more than the sack method and allow for less child participation. The pellet is interesting because, as it absorbs water, it expands to about seven times its original size.



Begin with seeds that are to be transplanted into the garden. Beans, okra, bell peppers, and squash are examples.

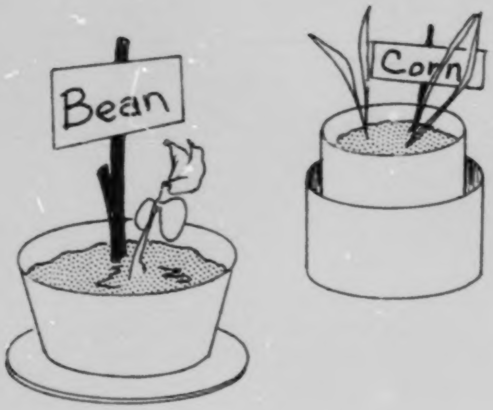
Moisten soil in container (or soak peat pellet). Press one seed into the center of the container. Small seeds should be barely covered with soil; larger seeds should be covered by ¼ to ½ inch of soil.

Plant a few seeds one day and others later so the children can compare stages of growth.

Keep the container moist and in a warm (not hot) place. Water with a small spray bottle, eye dropper, or kitchen baster. Usually children do this carefully.

After the seeds sprout, move the containers to the place in the room with the most light. Don't let them dry. When a seedling grows several sets of leaves, transplant it to a prepared garden spot or to a permanent container. Don't disturb the roots.

It may be necessary to help some plants adjust to the outdoors by taking them outside for a few days and returning them to the room at night.



Identifying Seeds

Print the name of each type seed on a strip of paper. With clear tape, fasten to a toothpick, used wooden match, or twig. Cover the name with tape.

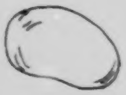
When possible, use seed-packet pictures in sandwich bags to identify the seeds.

Beans

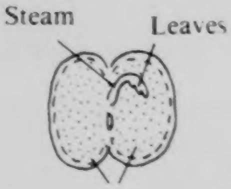
Beans are good to begin with because they develop rapidly and children can see the stages of growth.

A bean begins to grow after the seed has been in the soil a few days, if growing conditions are right.

Outside of
Been Seed

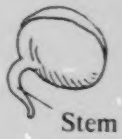


Inside of
Bean Seed
(cross section)

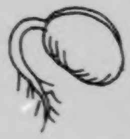


Food Storage

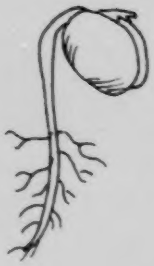
Cotyledons separate.



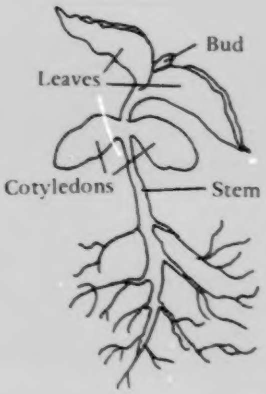
The food-storage leaves (cotyledons) separate or split apart.



The stem breaks out of the seed and grows downward. The main root and smaller roots form.



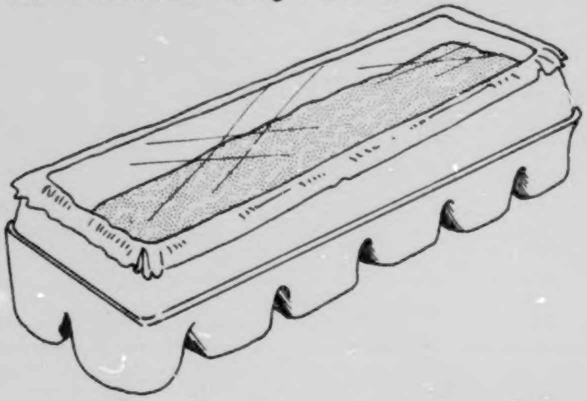
The tip part of the stem grows upward. It carries the food-storage leaves and pushes above the ground.



When the plant gets to this stage, true leaves form. Transpiant the plant outdoors.

Egg Carton Greenhouse

Seeds may be planted in egg cartons or in halved egg-shells in egg cartons. With proper moisture and warmth for sprouting seeds, the carton can be used as a greenhouse.



Directions:

1. Cut the top of the lid out of an egg carton. Tape plastic over the top, as shown.
2. Punch a hole in the bottom of each egg compartment.
3. Fill the compartments or individual egg shells with sand or a mixture of soil and sand.
4. Press one seed into the soil in each compartment.
5. Sprinkle water on soil until it's damp but not soggy.
6. Close lid and place carton on tray in warm, sunny window.
7. Prop open the lid when plants grow close to the plastic.
8. For transplanting, cut apart the sections of the carton. If it's a cardboard carton, the plants may be left in the sections of egg carton and planted in the garden. If the carton is plastic foam, remove the plants, disturbing soil and roots as little as possible. Water the plants gently. Shade them from the hot sun for a day or two.

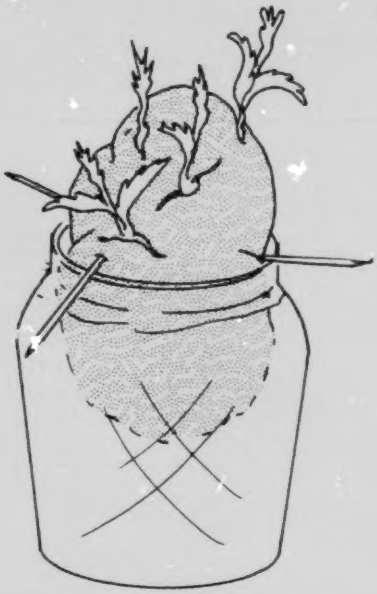
Another way to make a greenhouse is to set any container inside a plastic bag and loosely tie the top.

Growing New Plants From Old

Starting new plants from a healthy plant is not difficult with the right procedure. Use stem, cone and leaf cuttings, runners, and offshoots to start new plants. See *New Plants from Old* by Charles Evans for simple, easy-to-follow instructions.

Potato Plant

Choose a potato with lots of eyes. Choose one that will not slide through the mouth of a tall jar, or stick three toothpicks into the sides of the potato about an inch below the top. Put the potato in the jar so the toothpicks rest on the rim. Fill the jar with water to cover the bottom half of the potato. Make sure the bottom is always in water.



Observe the plant's growth. When the eyes turn green, cut the potato into sections, making sure each has at least one eye. Then place the sections into one-inch-deep soil, in pots. Put pebbles or broken pottery in bottoms of pots for drainage. Place the pots in a shallow tray of pebbles for additional drainage. Keep the tray wet.

Note: To grow potatoes in a garden for food, use seed potatoes, not potatoes from grocery bins.

Sweet Potato Vine

The sweet potato grows into a long, lush vine. Choose one with many eyes. Set the pointed end down into the jar of water. Sweet potatoes are slow starters; most will take six weeks to sprout green shoots. However, if the potato is going to grow, it will send out white roots within 10 days. The plant grows well in water; it need not be planted in soil.

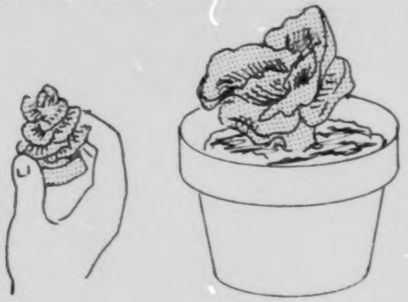
Onion

Choose a jar to fit the plant or use three toothpicks, as described above. Peel the outer layer of dry skin from the onion. While growing the onion in the jar, keep the bottom covered with water.

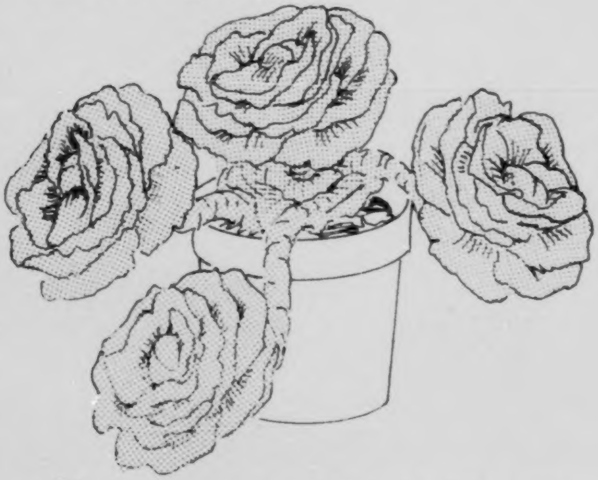
Note: Potatoes and onions which have already sprouted have the best chance to grow.

Cabbage

Cut the leaves from the sides and top of cabbage. Leave a small portion of each leaf attached to the stem.



Plant stem (bottom down) about an inch deep in loose soil in the pot. Soak soil with water and place in warm, light window. Water frequently until leaves begin to grow.

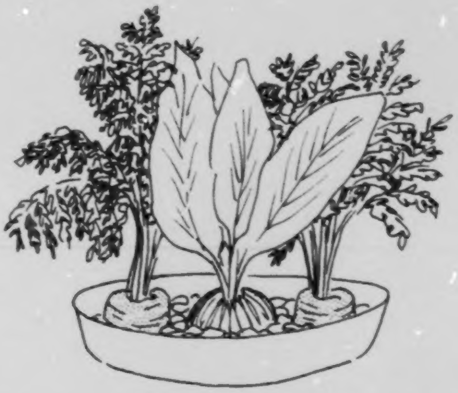


When necessary, transplant to a larger pot. The plant will develop branches and a small, edible cabbage will form at the end of each branch.

Note: Plant the cabbage stem in a garden if desired. In the southern half of Texas, it can be planted in the fall and will grow all winter, In the spring it will flower.

Beet And Carrot Centerpieces

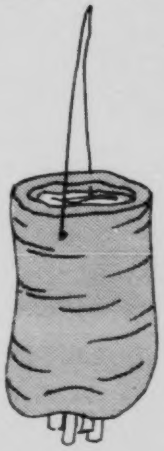
When selecting carrot tops, look for fresh ends or tiny shoots.

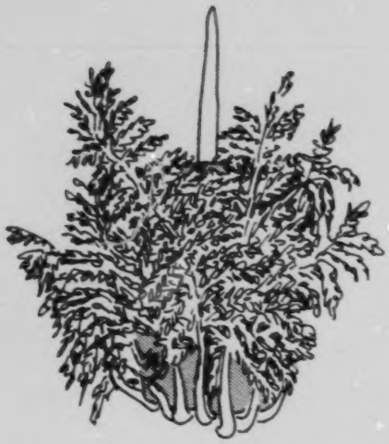


A glass pie pan or dish is an attractive container for a beet and carrot centerpiece. Fill the bottom with peebles. (Use colored aquarium gravel or add bits of colored glass or marbles to the sand.) Add water and beet tops and carrot tops, leaving an inch of vegetable on each. Do not place in direct light. Make sure the bottom of the tops are wet. They will sprout within a week. The arrangement will last about three or four weeks. Try turnips and other roots.

Carrot Fern

Cut off the bottom third of a large, firm carrot. Turn the rest of the carrot upside down and scoop out the insides with a potato knife. Push a





piece of wire through the carrot and hang it in sunlight. Keep the hollow center filled with water. Within a week, fern-like greenery will grow up the sides and over the carrot, lasting about 4 weeks.

This method of planting works well for most plants that can be hollowed out.

Experimenting With Seeds

Look for all kinds of seeds, not only those appropriate for the garden. Perhaps pecans and acorns, gathered last fall, are available. Plant them. Also plant avacado seeds. Rinse them but don't let them dry. Bury the avacado seed in soil so the pointed end peeps out. Use sacks for larger seeds. Ask the children to look for seeds at home and to ask parents to help.

Apple, Pear, Grapefruit, and Orange Seeds

These must be rinsed and dried. Soak them in water for one or two days or until they sink to the bottom of a jar. Place them an inch apart in a dish of soil. Find a sunny place with no mud. After passing them gently into the soil, cover with a layer of soil. Soon there will be a tiny orchard.

Lentils

These make a lovely forest for about two weeks. Place a handful of lentils into a shallow dish with enough water to cover the bottom but not enough to cause the lentils to float. Set in light, but not direct sunlight. Keep moist. Other dried beans work with this method: kidney beans, navy beans, pinto beans, lima beans.

Peanuts

Place the peanuts in a moist paper towel. Keep moist by watering daily. Soon, tiny sprouts will push up and long roots push down. Line a jar with paper towels and place peanuts near the outside. Hide them for a few days in a dark place. There will be a fine display of root systems. Transfer plant to soil.

Watermelon, Corn, and Pumpkin

Dry overnight on a paper towel. Let corn dry on the cob, then gently poke off the kernels. Place two rows of kernels about an inch apart in a dish. Cover with a half-inch of soil. Watermelons will sprout in about a week, corn and pumpkins in two to three weeks. Keep soil moist but not muddy, and in a sunny place.

Plant Time-Chart

	Beans	Potatoes	Carrots	Peas	Corn
Planted	1 April				
Roots Appear	10 April				
Leaves Appear	13 April				
Original Height					
Height - 1 week					
" - 2 weeks					
" - 3 weeks					
" - 4 weeks					
Flowers					
Completed Harvest					

Keep a chart or a notebook like the one shown. If desired, keep track of methods, results, conditions, and the time of year. Plant seeds under different conditions and compare results.

For carrot tops and other plants used for decoration, note how long each decoration lasts.

Try this:

To show their strength, place beans or peas in a jar under proper conditions and cover the top with a piece of cardboard held in place with a rock. The plant will grow until it pushes the rock and the cardboard off the jar.

Plants Without Leaves

There are fascinating plants which have no leaves or flowers. Though not lush and green, they are alive, healthy, and growing.

Mushroom

Mushrooms belong to a group called "fungi." Some forms are edible and considered a delicacy. Others are a deadly poison, so never eat wild mushrooms without an expert's approval.

Not all fungi look like mushrooms. Some look like rust, others like tiny matches growing in the ground, others like polka dots on leaves, shelves on tree trunks and stumps, or tiny ears or cups that fill with dew. Some fungi are parasites, living off other plants. Their seeds or spores swim or are blown in the wind.

Fungi are related to bacteria. Both are responsible for many infections and diseases. They are the least understood of plants.

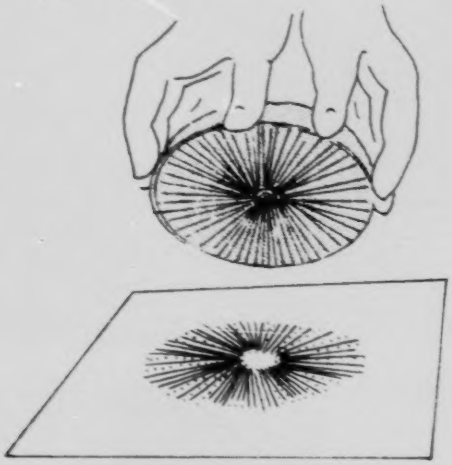
The chemicals in leafless plants help bring about the decay of plant and animal remains. If they did not, forests would be messy and trees poorly nourished.

Purchase enough fresh mushrooms for each child to examine one.

Making Spore Prints (air-born seeds)

Materials:

- a clean white piece of paper
- a mushroom cap
- a jar



Directions:

Cut stem close to the top. Place gills down on the paper. Cover with jar for several hours. Lift away the jar and remove the mushroom cap. There will be a print of the cap on the paper.

Mildew and Mold

Leave a tomato, cheese, or other food stuff in a refrigerator. Label it. After a week, examine it with a magnifying glass. Probably mildew or mold will be visible. Both are plants.

Leave a piece of bread in a wrapper during that week. It will grow a green mold that is attractive under the microscope and is used to make penicillin, a medicine that saves lives.

Plant Problems

Be alert to the condition of plants. If they look unhealthy, they may be growing under bad conditions: not enough water or drainage, dry air, too low or too high temperature, diseases, harmful insects, inadequate food. Diagnosing plant needs and caring for sick plants may be interesting to some children. Encourage them to learn how nature solves problems. *Rx for Ailing House Plants* by Charles Evans includes home remedies for plant care. Use these rather than store-bought chemicals and gadgets. Also check the gardener's guide in this section.

Poisonous Plants

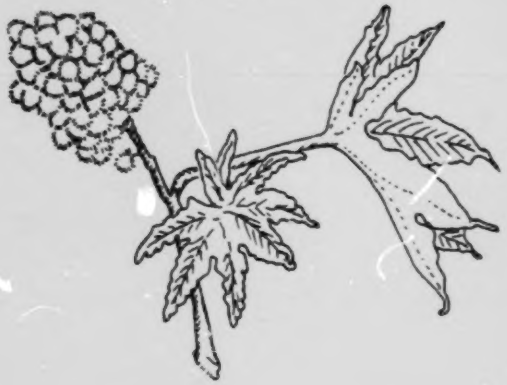
Plants are necessary for human life. They take in carbon dioxide from the air and give oxygen, cool the air, provide food, shade, beauty, and learning opportunities. But there also are dangerous plants which may cause discomfort, sickness, or death.

Adults should familiarize school-agers with the area's poisonous plants, shrubs, and trees. Some wild plants are poisonous and some cultivated plants are poisonous. Parts of some are poisonous, the other parts edible. This is true of vegetables and fruits, as well as plants used as ornaments.

Teach children not to fear plants, but to respect and be cautious when picking or examining plants they aren't acquainted with. The rule should be: "nothing in or near the mouth, fingers included." Information in this section on specific poisonous plants is adaped from the National Safety Counsel's *Poisonous Plants.* Write for this free publication (see Bibliography) and mount it where the children can study it. Show children the live plants as well as the pictures, when possible.

Keep a record with the children of poisonous plants they find. The record might include the common and botanical name, description, poisonous parts, where plant is or was, symptoms of poison, and emergency measures necessary should the plant be eaten.

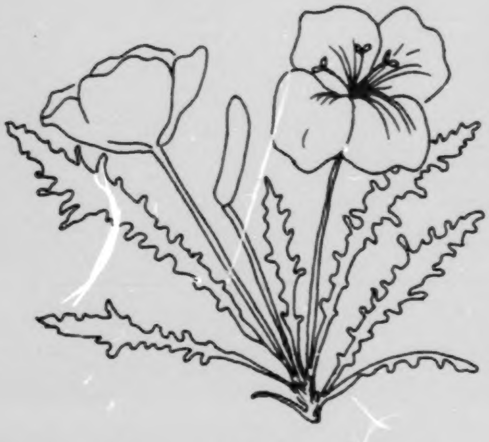
Castor Beans



These grow quickly once a year, and are frequently planted for quick shade. Beans (seeds) are pretty and used for decoration.

Chewing a single seed can be fatal.

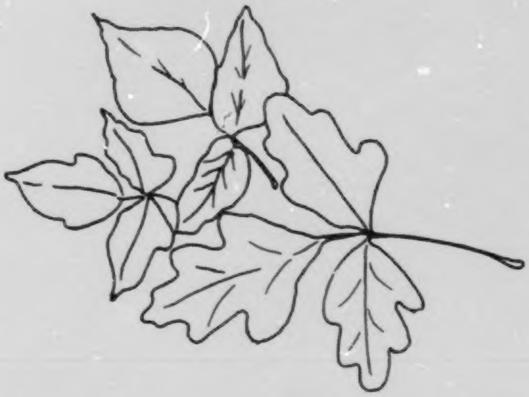
Buttercup



Yellow flowers and fruit resembling small pine cones. Bloom in the spring. Found in fields, yards, ditches.

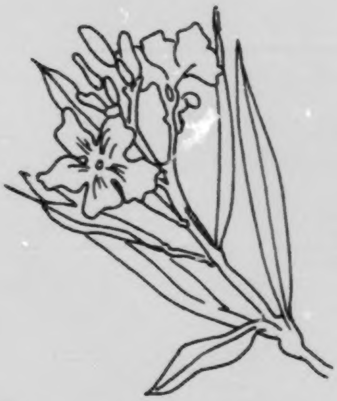
All parts poisonous. May severely injure digestive system.

Poison Ivy and Poison Oak



Low-growing shrubs or climbing vines with leaves growing in groups of three. Contact causes a severe rash affecting some people more than others.

Oleander



Large evergreen bushes with long slender leaves and clusters of red, pink, white, or yellow flowers.

Branches, leaves, and flowers are poisonous. Causes digestive trouble, affects heart, may cause death.

Other plants such as poinsetta, narcissus, lark spur, wisteria, iris, azalea, lantana, and many houseplants have poisonous parts. Even common seeds such as acorns and apple seeds can be poisonous if a lot are swallowed.

4. Things That Creep, Crawl, and Fly

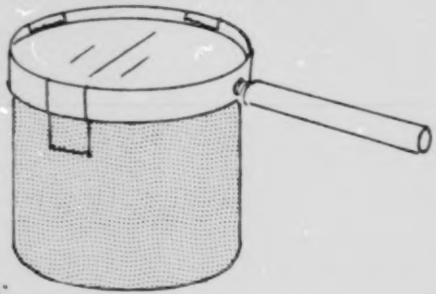
Inspect An Insect

It crawls! It creeps! It flies! Is it an insect? (Or is it SUPERFOX?) If it has 6 legs, it's probably an insect — many also have wings and antennae.

Let's spy on a fly or some other insect and see what it's like.

Materials:

- a magnifying glass (the bigger the better)
- a plastic container a little smaller in diameter than the magnifying glass



Directions:

Cut the top and bottom sections off the container leaving a 2-inch to 3-inch section open at both ends. Fit magnifying glass over top and tape in place.

To spy on a fly or other creature, trap it inside the plastic glass - the magnifying lens is already in place.

How many legs does it have? How are they different from human legs? What color is it? How are its eyes different from human eyes? It's mouth? Place a small branch in the container leaving a 2-inch to 3-inch section open at insect eats.

Hints for Handling Insects

- Children should not disturb or touch an insect until they've been told it's safe.
- Handle the insects carefully and, if possible, release them unharmed.
- Make slow movements so as not to excite flying insects which sting.
- If a child is stung, identify the insect, if possible, to determine what should be done.
- Call insects by name and help the children learn facts about each.

Common Insects and Their Relatives

Ants — Ants live together in a colony. They are industrious and interesting to watch. Teach the children which kinds sting.

Bees — Bees live in hives or hollow trees. They make honey from the nectar of flowers and they pollinate flowers. They have a painful sting, used to defend themselves.

Butterflies — These are one stage in a life cycle which includes egg (larva), caterpillar, cocoon, and butterfly (or moth). Butterflies and moths are harmless to handle but some caterpillars sting.

Cockroaches — Cockroaches are among the most primitive of insects. They live inside and outside and appear at night to hunt for food in garbage cans and dirt. They carry germs.

Crickets — Crickets rub their legs together to make a pleasant chirping sound. They do not bite or sting, but eat fabric.

Grasshoppers — These are jumpers and fun to catch. They eat plants but do not sting or bite people.

House Flies — Flies have sticky pads on their feet so they can walk upside-down. They breed in filth and carry human diseases from one place to another. Yuck.

Ladybird Beetles — Because they eat tiny insect pests, these insects are popular. They are called ladybugs and fun to watch.

Mosquitoes — Mosquitoes draw blood with a pointed beak and can carry disease. They lay eggs in stagnant water.

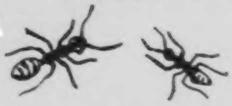
Praying Mantis — This is a strange looking insect that can grow to four or five inches long. It eats other insects and doesn't harm people.

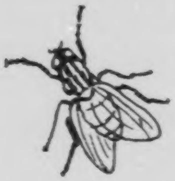
Sow Bugs — Sow bugs are not insects. They are crustaceans, related to the lobster and shrimp. They live mostly on decayed vegetables but sometimes eat living vegetables and flowers. Sow bugs sometimes are called "pill bugs" because they roll into balls for protection. Or they may be called "doodle bugs" because they leave doodles where they've crawled.

Spiders — Spiders come in all colors and sizes. They are interesting to watch. Their webs are beautiful and catch harmful insects. Most spiders are harmless to people but children should know those that bite. Spiders are not insects.

Wasps and Hornets — These kill insect pests and can painfully sting humans. The nests of the dirt-dauber wasp and the paper wasp are interesting to see, but children should not bother them.

Common Insect and Their Relatives


Ants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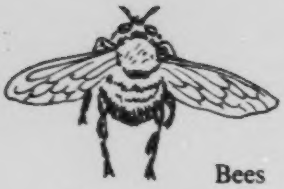
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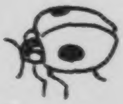
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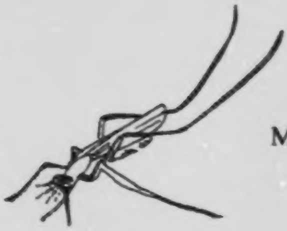
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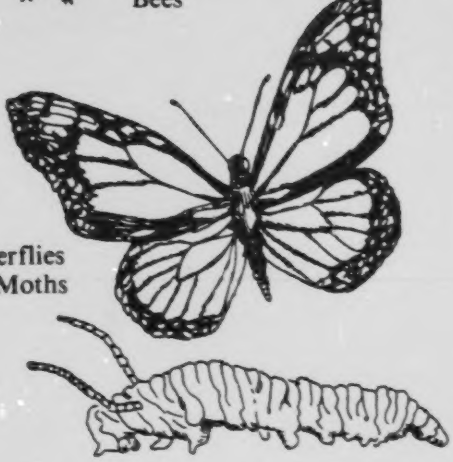
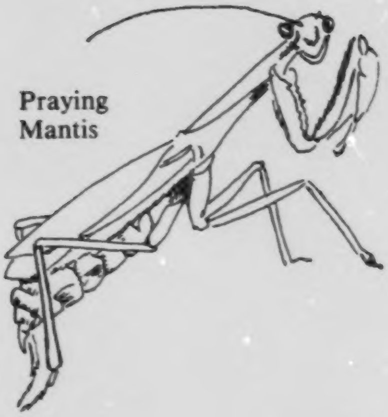
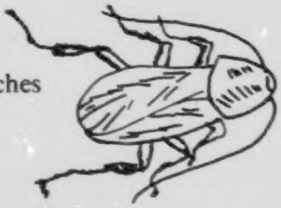

Butterflies
and Moths


Praying
Mantis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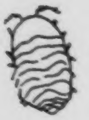
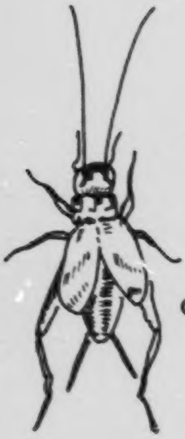

Sow Bugs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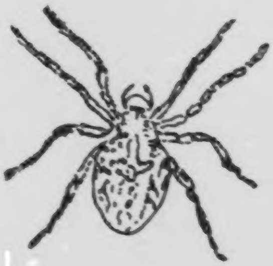
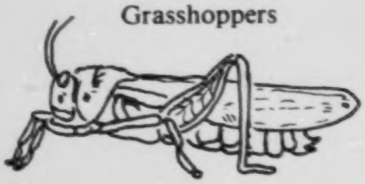
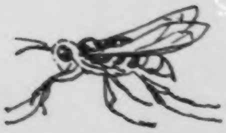

Spiders

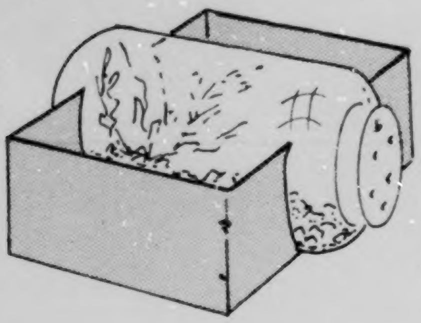

Grasshoppers


Wasps
and
Hornets

Insects As Pets

Containers

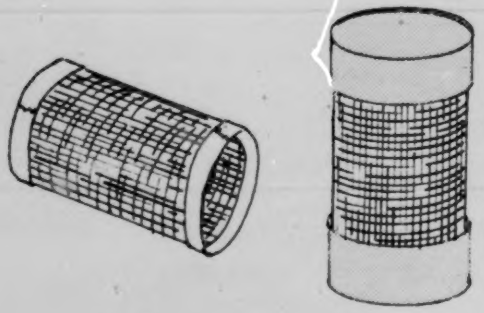
Materials:
- clean plastic gallon jar
- small cardboard box



Directions:

Cut the box to fit the jar, as shown. Lay the jar on its side and fill the bottom side of the jar with pebbles for drainage, sand or soil, and a twig or plant. Punch holes in the lid for air or use cheesecloth and elastic bands. Set the jar in the cardboard stand. This type of container is suitable for some insects as well as snakes, toads, or lizards.

Materials:
- 2 empty tuna cans
- 1 piece screen wire about 8 inches by 12 inches
- masking tape



Directions:

Roll a small oblong piece of screening into a cylinder that will fit snugly inside the cans. Tape edges of screen as shown. Push tuna can firmly on each end of wire cylinder. This container is suitable for leaf-cutting insects such as caterpillars, butterflies, and chameleons.

Note: In all cages, place a moist sponge to supply drinking water and increase the humidity.

Fruit Flies

Catch fruit flies by using fruit (they love bananas) in a jar as bait. To feed them, sprinkle a few drops of dissolved yeast onto ripe banana slices. Place half a paper towel, folded to fit, into the jar. This gives the flies a place to perch and maggots (fly larva) a place to grow.

Spiders as Pets

Web spiders make excellent pets if they have a square cage in which to build webs. They'll eat fruit flies. One or two flies a week will be enough for most spiders, but feed them as much as they will eat. (Spiders can fast for months without apparent harm. If they're fasting, sprinkle their web gently with water once or twice a week.)

Ants

Ants also make fascinating pets. They are social insects. There are hundreds of different kinds of ants. All are industrious. They seem to go to specific places without signs or trail-markers, but actually the ant that finds food travels back to the nest and leaves a scent by rubbing its abdomen on the ground. The trail is easy for other ants to follow. The best way to watch ants is in a homemade cage. (The ants, not you.)

Fit a jar inside another so that there is about an inch or less between them. Fill this opening with loose soil. Insert a piece of plastic tubing almost to the bottom and add drops of water when necessary. This will keep the earth damp, and ants need moistness. Cover the jar with black paper so it will be like an underground home.

Different groups of ants like different foods, so offer a selection until discovering a preference. Possibilities are diluted honey or sugar syrup, a candy gumdrop, bread, hard-boiled eggs, cheese, dead insects, and yeast. Don't forget the piece of moist sponge.

A long-lasting colony must have a queen ant.

Ants from different colonies are enemies, even if they are the same type, and will fight to the death.

For large ants that bite and might get loose, place the cage in a shallow pan of water. Or place coffee cans or jars filled with water under each corner of the cage.

Crickets

For hundreds of years the Chinese and Japanese have kept crickets as pets, to enjoy their chirps and have good luck throughout the year.

Late summer and fall is the best time to look for crickets. In fact, many think of the cricket's chirp as announcing the coming of autumn.

There probably are crickets in the yard or a nearby field. They live in burrows and under stones. They eat grass and clover. Only the male cricket chirps so collect several crickets to be sure of having one that will sing. The male chirps by rubbing the covers of his wings against each other. He lifts one wing about 45 degrees and draws the scraper of the lower wing against the upper wing. To keep from tiring, he'll raise one wing, then the other.

Use one of the homemade cages already described to house crickets. For food, try raw potato, apple, or melon rind. Remove uneaten portions of food daily.

According to old stories, the temperature can be told from the chirps of a cricket: count the number of chirps in one minute, divide by 4, add 40 and the answer is the approximate temperature. Put a thermometer in the cricket cage and check to see if the calculated temperature is accurate.

Date and Time	Cricket Temperature	Thermometer Temperature	Results:
			Times tried:
			Times correct:
			% correct:

With "wild" pets, it's a good scientific approach to keep a chart or record — for making comparisons and providing background material for later projects.

Type of Animal	How obtained	How contained	Preferred foods	Length of time kept (Released healthy? Died?)	Characteristics
spider (Tarantula)	Caught with net	5 gallon glass aquarium	grasshopper mealworms fruit flys catterpillars crickets	lived 3 months - very healthy Died because of too rapid temperature drop one night.	They do not catch insects in web. But once they catch one, they hold it down with silk threads.

Spiders

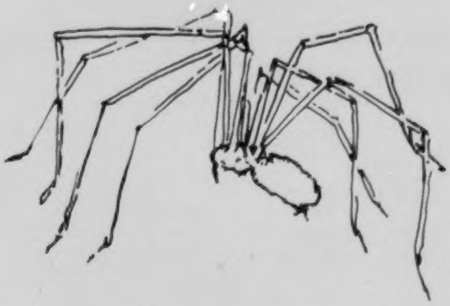
Spiders are one of the largest groups of animals with jointed legs and hard outer coverings. They are of the class Arachinda, have four pairs of legs, no antennae, no wings, and only two body parts - thorax and abdomen. They are not insects. Insects have six legs and three body parts.

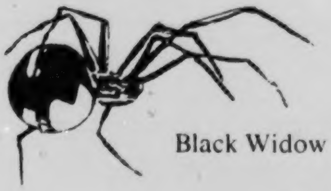
In Texas, the Hairy Mygalomoph (the tarantula) is an interesting spider. It catches small birds, snakes, and lizards. It's poisonous but not deadly, and rarely bites if well fed and not provoked. It will live in an aquarium. To eat, it sucks juice out of crickets and grasshoppers. Tarantulas mate for life and live many years.

Characteristics

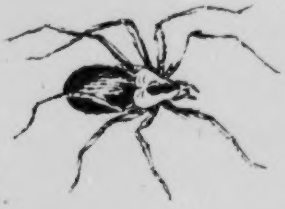
- Spiders make silk from abdominal glands and use the silk to make egg cases, nurseries, webs, silk tunnels, line burrows, and trap doors.
- Spiders fly by spinning a group of threads that's carried by the wind. Some spiders orbit the earth's upper atmosphere in this manner.
- They can dig and burrow.
- They can jump.
- They can spit accurately, sometimes squirting sticky threads at their prey and holding it until they grab the prey with fangs.
- All spiders can bite but only a few do and fewer still are harmful to most people. Learn the dangerous kinds in the area, wear gloves around them, and be careful. In Texas, the Black Widow, Brown Recluse, and Tarantula are poisonous.
- The hairy Imperial Spider fishes for a certain kind of moth. It attracts the moth by lowering and swinging a silk thread baited with a bright ball of sticky web material. When the sticky ball hits the moth, the ball bursts and the moth is caught in a tangle of web. The spider then hauls in the line. There are net-throwing spiders who spin a net and hang upside down over a leaf or other flat surface, holding the net just above the area. When an insect happens by, the spider drops the net over it.
- Spiders eat lizards, snakes, some fish, and insects such as ants, mosquitoes, flies, mealworms, cockroaches, millipedes, and wood lice.
- The best time to catch most spiders is in the early morning hours or at night with a light. Spiders hunt during these cool hours.
- Spider silk is the strongest natural fiber known to humans.
- Spiders don't stick to their own web.
- Do not slap at a spider on someone's arm or leg. That could cause the fangs to puncture the skin. Instead, brush the spider off with a strong, swift, sweeping movement.
- Some people are allergic to spider bites as others are to bee and wasp stings.
- Harvestmen or Daddy-Long-Legs are spiders, although they have only one body part. These are easy to identify and are not poisonous.

Daddy-Long-Legs

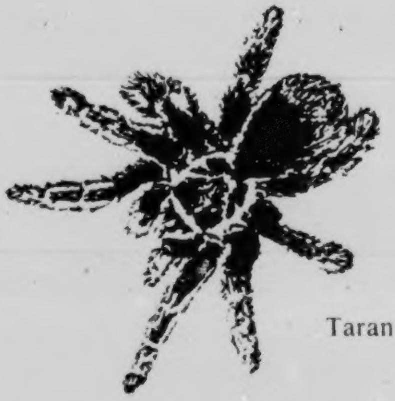




Black Widow



Brown Recluse

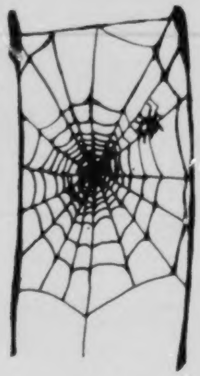


Tarantula

Painting A Spider Web

Materials:

- a can of good quality enamel spray paint (cheap paint can dissolve a web)
- contrasting colored construction paper
- a can of clear-drying fixative spray



Directions:

1. Webs may be found on shrubs, weeds, grass, buildings, and fences. On foggy mornings, the dew on the webs makes them easier to see. Don't harm the spider. Blow on it until it runs off the web. If the spider drops from the web on a thread, cut the thread so the spider can't return
2. Hold the can at least 10 inches away, carefully spraying the web on all sides until the design is distinct.
3. Cut the paper slightly larger than the web. Spray the paper with fixative until it looks wet. Be sure to spray the edges.
4. Stick the paper to the web.
5. Break the web's anchor lines around the edges of the paper so as not to tear the web.

Note: Scorpions are related to spiders. They bite and are especially dangerous to those who are allergic to them.

Butterflies and Moths

There are over 100,000 kinds of butterflies and moths. They belong to the order Lepidoptera. This long name means "scale wing" and refers to the many tiny scales that cover the wings and give the insects their striking colors. Picking up a butterfly or moth can damage its scales, which rub off as a fine slippery dust. If the butterfly or moth loses many scales, it cannot fly well and soon falls prey to birds or other insect-eaters.

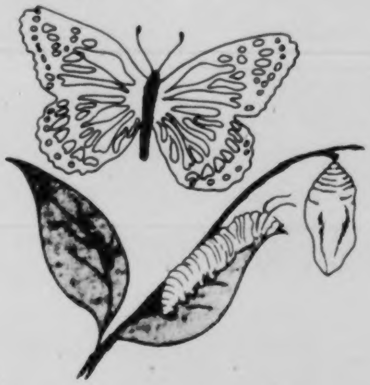
Most butterflies and moths are beneficial because they pollinate flowers. Caterpillers, which evolve into butterflys, can damage trees and crops because they eat almost constantly.

Differences

- Butterflies are active during the day. Moths are active at night and attracted by light.
- Butterflies rest with their wings erect, moths with their wings open or folded rooflike over the body.
- Butterflies have long slender bodies with a distinct head. Moths are plump and hairy or fuzzy and it's hard to see where the head starts.
- A butterfly has a long straight antenna with a knob at the end. Moths have various shapes of antennae (slim filiaments, curved, jagged), but most are feathery and knobbed at the end.
- Moths make a fuzzy or hairy cocoon (pupa).
- Butterflies make a hard pupa or chrysalis.

Likenesses

- Both eat by sucking with a long tubelike mouth. When not in use, the tube is coiled like a spring and rests under the head.
- Their taste organs are on the bottoms of their feet.
- They detect presences with antennae.
- They fly well. Moths are among the fastest of all flying insects. Butterflies, although slower, can fly distances as great as 3,000 miles. The most famous migrant in the butterfly world is the Monarch.
- Some butterflies and moths don't taste good to birds and are safe from being eaten. Other butterflies imitate their foul-tasting relatives in order to escape birds.
- Both have four life stages: egg, larva or caterpillar, pupa, and adult.

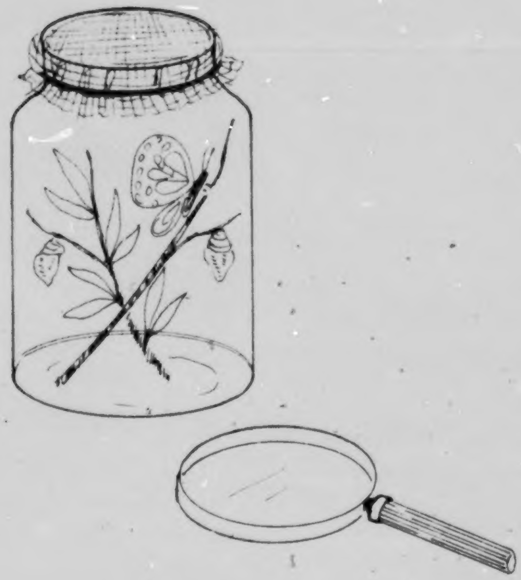


Searching For Butterflies and Moths

On a nature walk, look in cool, shady places for moths. Try the dark side of a tree or log. Look carefully – they may be camouflauged.

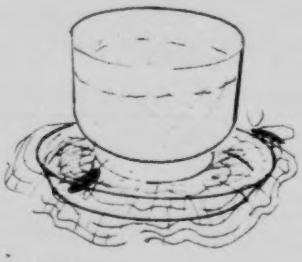
Try to find a pupa. Is it a cocoon (moth) or a chrysalis (butterfly)? With a magnifying glass, sneak up to a butterfly and moth and look for differences in their antennae.

Place a caterpillar entering the pupa stage into a large pickle jar with a net cover. Be sure to have plants the caterpillar will eat. Start with the egg stage and observe the entire cycle.



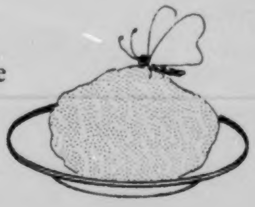
The last transformation is exciting: the cocoon shell splits and the weak, wet butterfly with crumpled wings pushes out into the air. When its wings are dry, release the butterfly and watch it fly away.

Insect Feeders

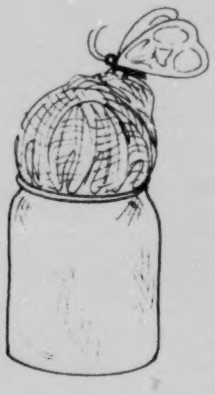


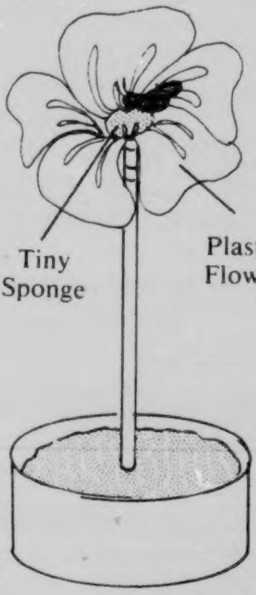
Jar is overturned in a saucer or large lid.

Netting prevents the insect from falling into the sugarwater.



Extend cheesecloth into a jar filled with sugarwater.





Use a wire to attach the plastic flower to the straw.

Pour the diluted honey or sugarwater through the straw so the insect can suck the food upward.

Wonder Worms

In some soils, earthworms make up half the weight of animal life.

There may be as many as three million earthworms in one acre of fertile soil. Earthworms loosen the soil like small plows. Some earthworms get all their food from the soil. If the ground is soft, they push a hole for themselves as they burrow. When the ground is dry or hard-packed, they eat their way through the soil, swallowing dirt or earth and digesting the plants and other food mixed in it. Sometimes plant-roots will follow the path made by these furrows. The tunnels also are homes for smaller animals, and serve as avenues for water and air to reach roots and underground animals.

Finding Earthworms

Carefully turn over logs or rocks. Watch how quickly the earthworms burrow away. Feel the four bristles on the rear part (lighter in color) of an earthworm. There are no bristles, however, on the first or last segment.

Place two pieces of paper on the table, one white, one black. Put a worm in the center and see which way it moves. Why does it move toward the black paper?

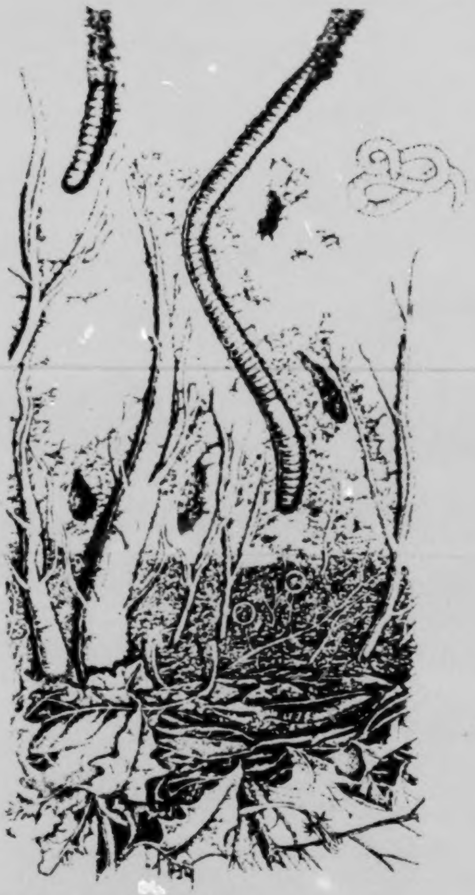
Try the same experiment using a dry paper towel and a wet paper towel. Which way does the worm move? Earthworms like cool, moist, dark places.

Remember that in scientific experiments, many tests may be necessary.

Notice how earthworms are conspicuous after a heavy rain. Long ago people thought that it had "rained" worms! Now it's known that rains force earthworms out of their tunnels and burrows.

Characteristics

- Earthworms can live and breathe a long time in water – the water contains needed oxygen and food.
- Earthworms breathe through moist skins. If the skin becomes too dry, they can't breathe, and die.
- Some earthworms tunnel down as far as 10 feet. Burrows may have many side tunnels.
- If an earthworm is cut with a spade or pulled apart by a bird, it can grow a new front or back end! But if it loses too much of its front end, both parts of the worm will die.



- Earthworms live as long as nine years.
- Baby worms hatch from egg cases called cocoons, from May to July.
- Earthworm droppings (wiggley-shaped humps or castings) make the ground rich and fertile. The more earthworms, the better the soil.
- In one year, earthworms can bring up as much as 50,000 pounds of castings from an area as big as a football field.
- Earthworms don't have eyes or ears.
- Earthworms are so helpful and useful that some people make money by growing and selling them.

Experiments

Earthworms have places on their skin (especially near their ends) which are sensitive to light. During a dark night, shine a light onto an earthworm. It will quickly disappear into a burrow. Then cover the light with red cellophane and shine it on another worm. What happens? Earthworms are blind to red light. Many people use a red light to hunt worms for fish bait.

Even though they have no ears, earthworms can hear by feeling vibrations in the soil. Try listening like an earthworm. Lie on the ground with ears plugged while a friend stomps. The stomping will be felt but not heard. In such a way, a worm can hear a hungry, hopping robin looking for food.

On a cool, damp night, it's possible to find giant worms called "night crawlers." They are the largest kind of worm, and make good fishing bait.

No wonder earthworms are called "wonder worms."

The *common field worm* may grow to 3 or 4 inches by the age of seven months. It begins laying egg cases when two or three months old. It lays an egg case every seven to 10 days. The cases hatch within two or three weeks if conditions are ideal. Newly laid cases are yellow, then become dark purple as they mature. If conditions are bad, egg cases may lay dormant a year or more.

Project 1

Materials:

- wide mouth jar
- 6 to 12 earthworms (a gallon jar holds a dozen worms)
- mixture of fine sand and good top soil, loosely packed
- a few broken pieces of pottery or pebbles
- ½ teaspoon brown sugar
- ½ teaspoon coffee grounds
- water

Directions:

1. Place the pottery in the bottom of the jar for drainage.

- Fill the jar with mixed sand, soil, sugar, and coffee grounds.
- Water well.
- Place worms in jar and cover with black paper.
- Leave for several days. The worms will burrow to the outside, next to the glass. Remove the paper to see them.

Project 2

Materials:

- 5 jars of worms
- different kinds of leaves in different sizes
- smushed or mulched paper soaked in water

Directions:

1. Moisten leaves and place two varieties in each jar.
2. Place containers in a cool, dark place for a week. Then check the jars and record which leaves the worms ate.

Questions: Does it make a difference whether leaves from the same tree are fresh or decayed? Will all leaves be eaten? (Some may be too large for the earthworm to drag into a hole).

For a sample chart or record, place pressed leaves to poster board.

Soil: Dead or Alive?

Soil is important: it's where things are broken down and recycled. Here's a way to investigate it.

Materials:

- a shovel
- newspaper
- jars
- a tray or egg carton
- a magnifying glass

Directions:

1. Dig up a section of soil at least four inches deep. Soil with grass or weed growth is best.
2. Place the soil on a newspaper and sort through it. Collect or make notes on what is found.

Included in the soil might be:

- grasses and weeds
- roots and root systems
- seeds
- pebbles
- ants
- grubs
- clay
- bones
- water
- worms
- spiders
- millipeds
- pill bugs
- decaying leaves
- eggs
- slugs
- perhaps a flower

Notice how things in nature depend on each other. Pebbles provide drainage for moisture to roots. Worms provide holes for water to travel through. Air circulates so eggs and insects can breathe. Insects provide waste which fertilizes the soil and helps plants grow. Bacteria decomposes leaves and twigs and makes soil rich and plants healthy.

5. Reptiles and Amphibians

Myths and legends about these animals sometimes are scary, but many reptiles and amphibians are small to medium size and have interesting secretive habits.

Reptiles include snakes, lizards, turtles, and crocodiles. Amphibians include frogs, toads, and salamanders. All have roles in nature which benefit humans. A few are poisonous or otherwise dangerous, and should be avoided.

School-agers are often outside, particularly during the summer. At the day care center, and on nature walks and field trips, they should have opportunities to identify and study reptiles and amphibians. Those especially interested might seek special guidance from experts, via books and volunteers.

Reptiles

General Characteristics

* Reptiles are covered with dry scales or horny plates.

* They breathe through lungs.

* They lay eggs or give birth to young by keeping eggs inside their bodies until they hatch.

* Young and old are alike in appearance and habits.

* When temperature drops to 50° or below, reptiles hibernate or become dormant.

* They cannot live long at temperatures over 110°.

Snakes

* Snakes are reptiles.

* Snakes cannot hear but respond to vibrations in the ground.

* They have no eyelids so their eyes are open even when asleep.

* A snake's tongue is used like an antenna for smelling and tasting. It does not sting.

* Snakes shed outgrown skins.

* Some snakes sense body heat and can find prey in darkness.

* Most snakes are not intelligent.

* They eat rodents and insects harmful to humans or plants.

* A snake's jaws unhinge to swallow prey larger than the snake's head.

* The snake's teeth slant backwards to swallow prey whole.

* Snakes can go long periods without eating because they don't need to keep their bodies warm.

* A snake moves by pressing its body tightly against the ground to get traction, and pulling itself along with the edges of its scales.

* Snakes are good swimmers.

* Some snakes made good pets, to watch but not touch.

Non-Poisonous Snakes

The following are non-poisonous snakes common to yards and trees in Texas. There is no reason to fear or harm them. Watch what they do. But remember, a non-poisonous snake may bite to defend itself, it's sharp teeth causing a painful wound which could become infected.

* The King Snake kills other snakes, even poisonous ones. King Snakes are constrictors (squeeze their prey) and are believed to be partially immune from the poison of other reptiles. They also feed on rodents, lizards, insects, and birds.

* The Scarlet Snake and the Scarlet King Snake fool enemies by imitating the deadly Coral Snake.

* Chicken Snakes enter chicken houses in search of rats and mice and also may eat an egg or young chick. Still, they are valuable to the farmer because they eat so many rodents.

* Green Snakes are the gardener's friend. They eat the larvae of insects such as the cut worm.

* Garter Snakes are harmless. Common in central and southeast Texas, they like areas with water so they can feed on frogs, toads, or fish.

* Except for it's tiny teeth, the Black Racer looks like the poisonous Water Moccasin.

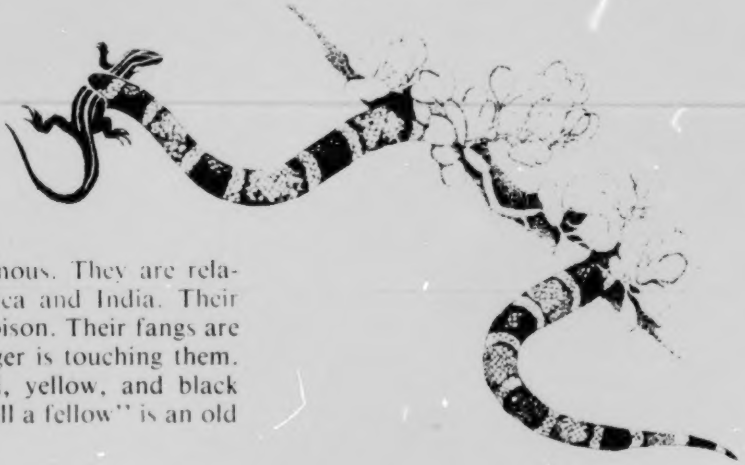
* The Bull Snake imitates a rattlesnake by moving its tail rapidly against the ground to make a rattling sound. Bull Snakes are constrictors and do not strike their victims.

* An interesting snake is the Silly Hognose. An excellent pet in captivity, it seems to have a sense of humor. When disturbed, it rears up and imitates a cobra, hood and all. (Cobras live in India and Africa. There are no cobras in Texas.) The hognose doesn't coil, it sways. If that fails to scare away a threat, the hognose rolls over on its back, sticks out its tongue, and plays dead. If turned onto its stomach, it turns onto its back again. Apparently, the hognose believes that dead snakes lie on their backs!

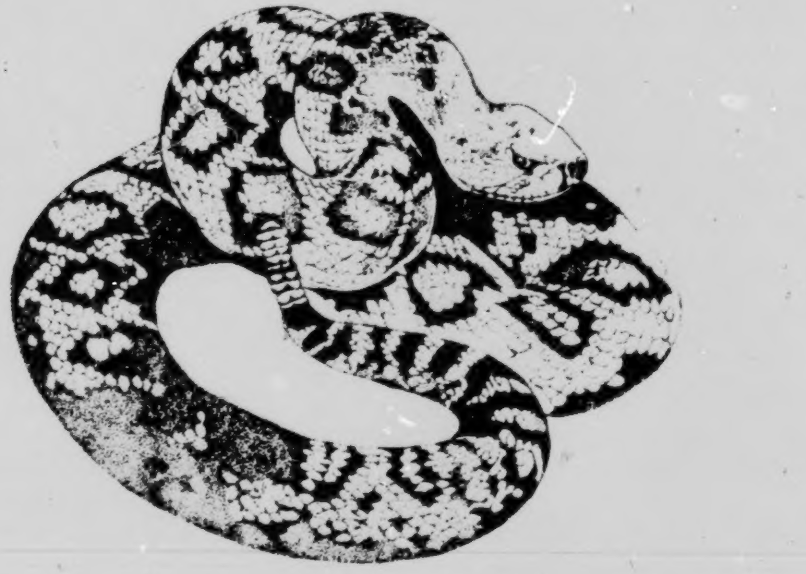
Poisonous Snakes

There are four poisonous snakes common in Texas. These also kill harmful rodents and insects. They will not attack a human unless frightened. Usually they avoid humans.

If someone is bitten by a snake that might be poisonous, keep the victim calm and quiet, identify the snake if possible, apply cold compresses and seek immediate medical aid.

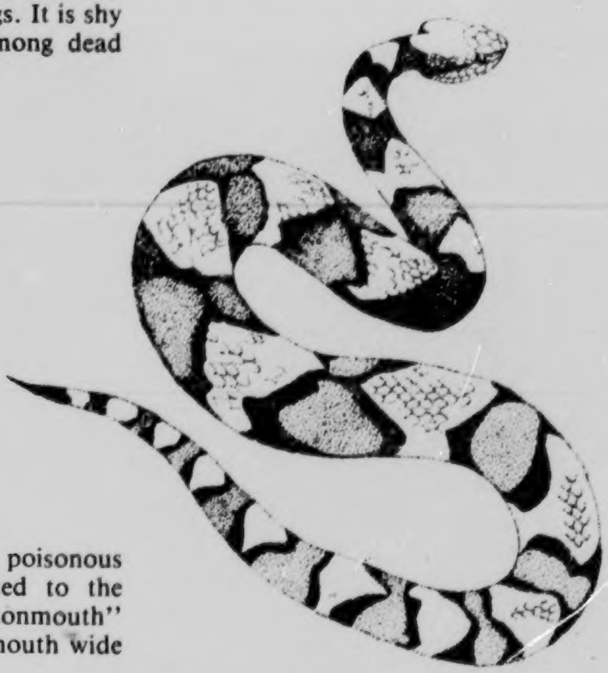


* Coral Snakes are poisonous. They are related to the cobras of Africa and India. Their venom is a strong nerve poison. Their fangs are short, so the greatest danger is touching them. The Coral Snake has red, yellow, and black stripes. "Red on yellow, kill a fellow" is an old but true rhyme.

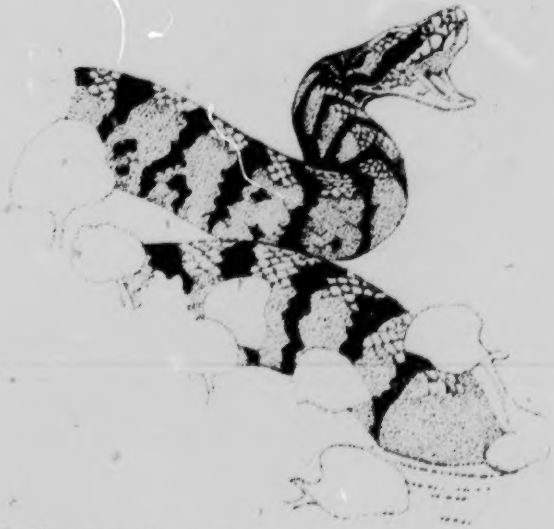


* The Diamond-Back Rattler and the Prairie Rattler are the rattlers most common in Texas. They are members of the Pit Viper family. Two tubes lead from the snake's poison glands or sacs to its hollow fangs. When the snake bites its victim, poison from the glands is squeezed through the fangs. This poison is called a Haemotoxin, and affects the blood. Located on the side of the head, below and in front of the eye, are the snakes "pits." They detect a prey's body heat so the snake can locate the prey without seeing it.

* The Copperhead is a Pit Viper with a flat-topped, angular snout, catlike pupils, and distinctive copper coloring and markings. It is shy and frequently lies camouflaged among dead leaves.



* The Water Moccasin is the only poisonous water snake in Texas. It is related to the Copperhead. It is known as a "cottonmouth" because, when scared, it opens its mouth wide and reveals a light-colored interior.



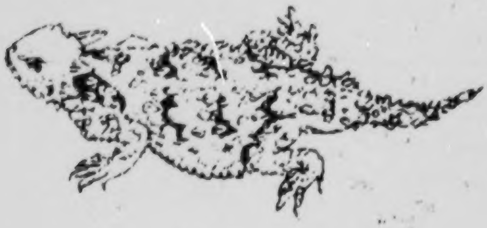
Note: Proper identification is important. Colored pictures are necessary. Excellent pictures and descriptions are available at Texas Parks and Wildlife. Or, the children could visit a Natural Science Center or a Natural History Museum to see live and stuffed snakes.

Lizards

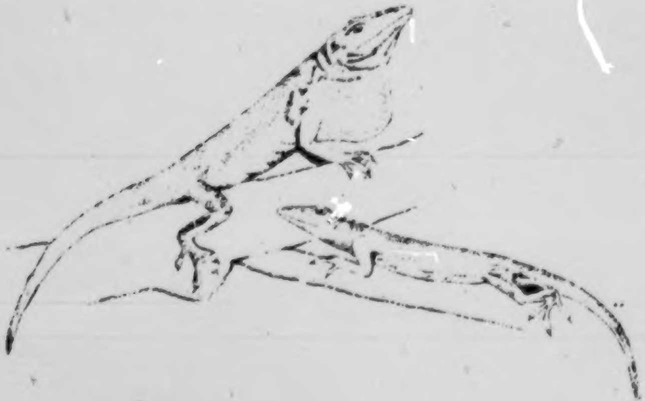
- Lizards have eyelids and ear openings.
- They usually have four legs, each with five toes and claws.
- They vary in size from about four inches to nine or 10 feet.
- Some lizards grow a new tail if the old one breaks.
- Lizards are relatives of ancient dinosaurs.
- The only two poisonous lizards are the Mexican Headed Lizard and the Gila Monster.
- Some lizards can travel as fast as 18 miles-per-hour.
- Lizards eat insects and small animals.

Several lizards are common and may become tamed:

The Spiney Reptile is an unusual lizard, commonly known as the horned toad. It's found in dry, flat places. At night it burrows into the sand and is alert and active in the hot sun.



The Anole can change color. It has a smooth, finely-scaled skin, and changes from brown to green in seconds, not to camouflage itself but because of excitement, light, or temperature changes. Anoles can climb a smooth wall with ease. The males fan out throat-skin to show bright red between scales. Anoles eat meal worms and other small insects. This lizard often is called a chameleon.



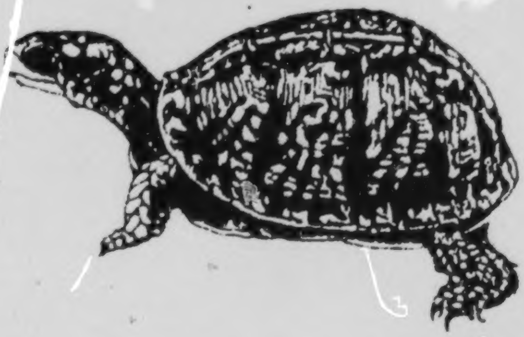
The Fence Lizard is active and moves quickly. It is difficult to catch and may bite. But the bite is only a pinch. Usually it calms down and becomes tame in captivity. It has prickley scales and a compact body. It feeds on worms, insects, and spiders.

Turtles

- Turtles live longer than animals with backbones.
- Turtles do most of their growing in five to 10 years.
- Hard-shelled turtles show growth rings on each horny shield of the shell.
- Turtles hatch from eggs.
- Turtles have no teeth but some have jaws with horny edges that can cut.
- Turtles breathe through their shells, so do not paint the shells.

Look on ponds for turtles basking in the summer sun. Woods and marshes are home to wood turtles and tortoises. Turtles live mostly in the water, tortoises on land.

There are many kinds of turtles. The one shown her is the Box Turtle.



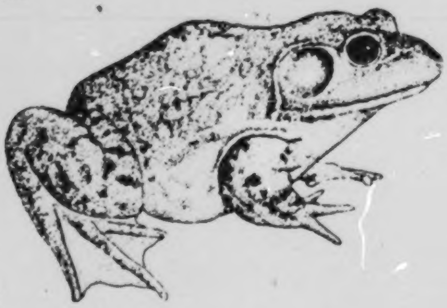
The turtle shell is made of bone. The turtle's only other bones are in it's head and feet and one in its back. Can the turtle crawl out of its shell? Can people crawl out of their bones?

Snapping Turtles are dangerous. They may be recognized by their snapping jaws, which are designed for breaking bones and can bite through a finger. Do not try to capture a Snapping Turtle.

Amphibians

General Characteristics

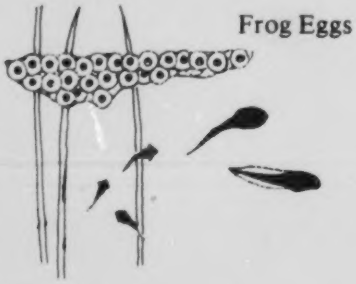
- Amphibians are backboned animals.
- They adapt to life in the water while young but live on land as adults.
- The young breathe through gills. Adults usually breathe with lungs.
- They are cold blooded.
- Almost all are less than three feet long.
- Most have four legs as adults.
- Usually they lay eggs in water to reproduce.
- Their skin is smooth, moist, and without scales.



Frogs and Salamanders

Frogs and salamanders are common amphibians in Texas. They can be found near most ponds and lakes. Usually their coloring blends with the surroundings so they are difficult to see.

- Frogs hibernate in the winter.
- Females lay eggs in jelly-like masses in shallow water.



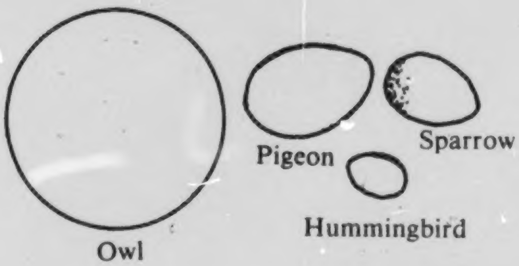
- Frogs hatch into tadpoles.
- Salamander eggs hatch into larvae.
- Adult salamanders have tails; adult frogs do not.
- Larvae and tadpoles live only in the water.
- Adult frogs and salamanders live on land and in water.

Up-close Observation

Sometimes a yard can be developed so harmless reptiles and amphibians will thrive. This is a satisfying way for children to learn about and enjoy them.

If the animals must be captive for observation, study their needs. For example, a lizard thrives in a large cage made of ¼-inch hardward cloth or screen wire which lets in plenty of sun and air. For flooring, use fine dry sand and some pieces of bark or stones. Since lizards do not drink from bowls, water must be sprinkled in daily, like rain.

Release the animal in a place like the one from which it was taken.

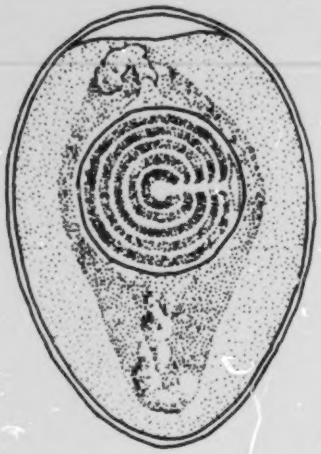


6. Oology – The Study of Eggs

An egg is a cell – the largest single cell. Crack open a hen's egg into a dish and examine it. It has an embryo (the undeveloped animal) and materials to keep the embryo alive while it grows inside the shell. The shell protects it from harm and has tiny openings called "pores" which let in air and help keep moisture from escaping too rapidly.

Characteristics of the Egg

- The shell is mostly calcium, as are human bones and fingernails.
- There are two inner shells. One coats the liquid mass and one coats the inside of the outer shell.



- The two inner coats separate at the larger or flat end to form an air pocket. An older egg has a larger air pocket because of evaporation.
- The yolk is the food supply.
- The germinal disc is a tiny nucleus or center in which the fertilized egg will develop.

Animals That Lay Eggs

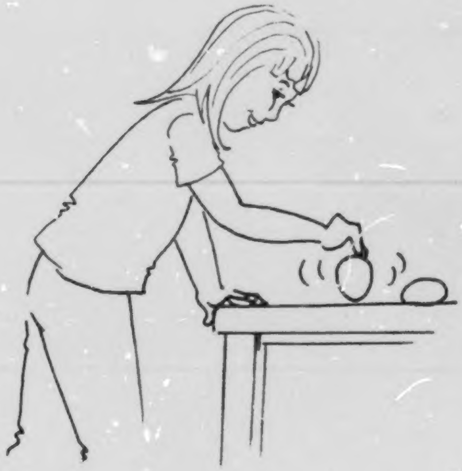
- reptiles (turtles, frogs, alligators, and most snakes)
- all birds – hens, ducks, ostriches
- crabs
- worms
- octopus and squid
- many fish
- snails
- most insects
- shrimp
- clams and other shellfish

Activities

- Scrambled eggs anyone?

It is said that an egg can't be broken if squeezed lengthwise. Want to find out if this is correct?

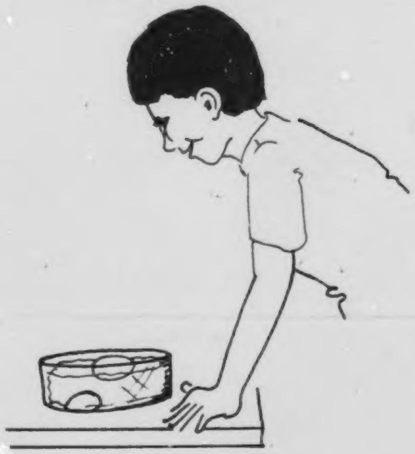
- Hardcooked or not?



How can a hardcooked egg be distinguished from an uncooked egg?

Spin the eggs on a table. The cooked egg will spin because the yolk is stable. The raw yolk slushes and throws the egg off balance.

- Which is the bad egg?



Put a good egg and a bad egg in a pan of water. The bad egg will float because it has a bigger air sack due to evaporation. It's not good to eat because the shell hasn't sealed it.

7. Birds

General Characteristics

Birds are found in more places than any other animals - in cities, parks, and desert. If they have food, water, and shelter, they will make themselves at home.

Birds are the only animals with feathers. Their size ranges from the hummingbird's several ounces to the ostrich's 300 pounds.

Duck feet are made to swim and paddle, hawk feet to catch and hold food, sparrow feet to walk and scratch. The bills and beaks of birds also show how adaptive the species is.

Birds are a good source of learning and pleasure for school-agers. Children are fascinated by their songs, colors, and habits. Children like to watch hummingbirds dart and hover, and hear the mockingbird sing. The latter has a long tail, commanding movements. It will defend its nest against cats and has been known to fly toward humans too near its young. Often, mockingbirds sing duets, each bird "mocking" the other.

Attracting Birds to the Yard

Natural food and natural shelter attract birds. See them on trees, shrubs, fruit-bearing bushes, vines, and wherever there are insects.

In the *Invite Wildlife to Your Backyard* (free publication), the National Wildlife Federation says that any patch of earth can be transformed into a healthy and attractive place for birds. Write for a copy to know what's recommended for Texas.

The United States Department of Agriculture recommends the following plants for use in day care centers to attract birds:

Trees — Mulberry, Live Oak, Pecan, Sycamore, Hackberry, Apricot

Shrubs — Fire Thorn, Blackberry, Creeping Juniper, Possumhaw, Pogoda Dogwood, Raspberry

Vines — Mustang Grape, Kudz, Honeysuckle, Trumpetcreeper

With care, these plants can be grown anywhere in the state. Some may be native to a region and require little or no care. Late fall is usually the best time for planting trees and shrubs.

Birds enjoy special winter treats, which can supply nutrients otherwise missing in their diet. Suet and peanut butter provide heat and energy and can replace insects that birds feed on in summer. Protein-rich seeds also are good for birds. In addition to the treats given here, use imagination and surplus materials to make other bird foods.

Bird Mix

Use leftover fat that hardens when cool. Or, ask the butcher for suet. Melt the fat. When it has cooled, mix in some or all of the following: cornmeal, small meat scraps, bird seed, chicken scratch, peanuts, oatmeal, rolled wheat.

Homemade Bird Feeders

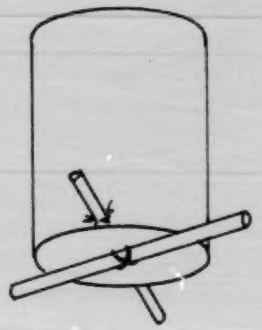
Make a large feeder from a cardboard oatmeal box, as shown below. Hang it from eaves outside a window or from a branch where children can watch the birds eat.

Materials:

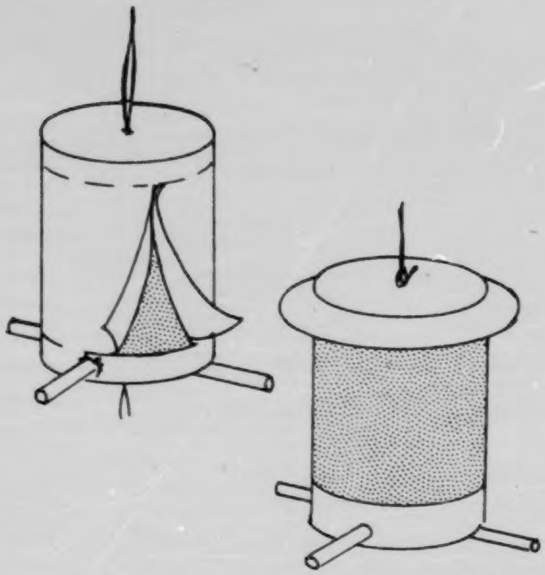
- cardboard oatmeal box
- 6-foot length of cord
- 2 perches, each 11 inches long
- 9-inch aluminum pie tin
- food mix

Directions:

1. Attach perches. Push one through sides of box at bottom. Attach the other to bottom of box at a right angle to the first. Tie tightly with cord at center. Extend cord up through box.

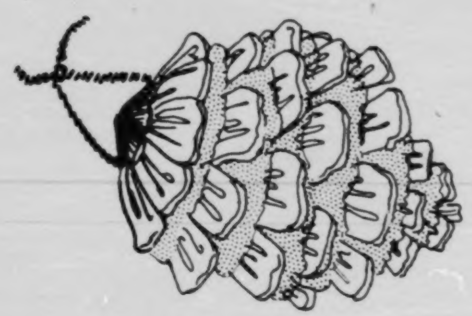


2. Fill box with mix, leaving cord in center. Level the top. When cold and firm, cut around box 1½ inches from top and bottom, as shown. Peel away sides of box.



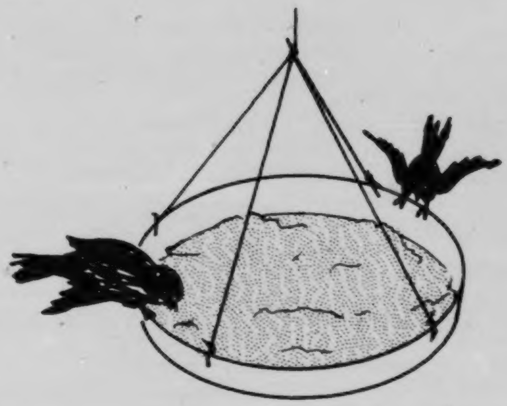
3. Punch hole in center of pie tin and thread end of cord through it. Knot cord as shown.

A smaller feeder can be made for the children to take home. Use a soft drink cup instead of an oatmeal box and a plastic coffee can lid instead of a pie tin. For perches, use popsicle sticks or 6-inch twigs.



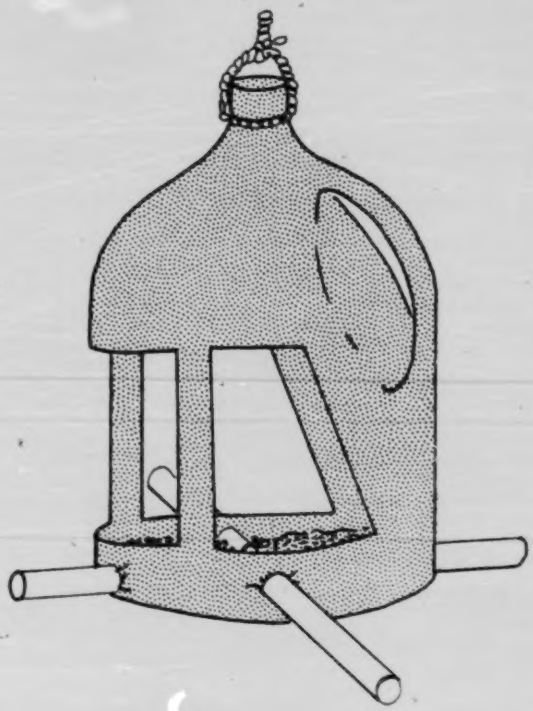
Pine cones can be used as bird feeders. Press warm bird mix into the cracks of the cones. Hang with string from low branches or tie to fence. Large birds and squirrels also will eat the pine cones.

Lids and plastic bottles make good feeders, especially with table food or grain. Feeders should be large and sturdy. Punch drainage holes.



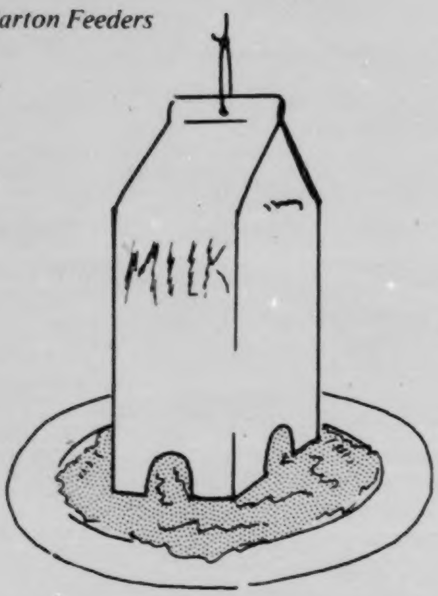
Bleach Bottle Feeders

Use a 1½-gallon bleach bottle. Cut four "windows" an inch from bottom. Punch small holes for perches as shown. and smaller holes in the bottom for drainage. Push through the perching sticks (½-inch doweling, 12 inches long). Tie sticks where they cross with a wire twister.



One group of school-agers made a pulley to raise and lower the feeder in order to fill it.

Milk Carton Feeders



Make a feeder for small birds by fastening a milk carton to an aluminium pie tin. Cut 1-inch openings in the sides of the milk carton, close to the bottom. Punch matching small holes in the bottom of the carton and pie tin. Fasten with metal brads. Half-fill the carton with bird seed. Tape the top shut. Punch hole through double fold at top and hang.

Ask a parent or a high school shop class to help make a sturdy feeder out of wood. Half-inch exterior plywood and exterior latex paint are easy to work with.

Materials:

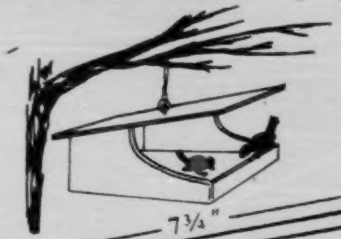
- glue, nails, sandpaper, paint, eyebolt, wire for hanging
- ½-inch exterior plywood
  2 sides — shaped as shown
  back — 6 inches by 13 inches
  roof — 16 inches by 16 inches
  bottom — 14 inches by 14 inches
  front — 1 inch by 13 inches
  eye bolt — 1 inch

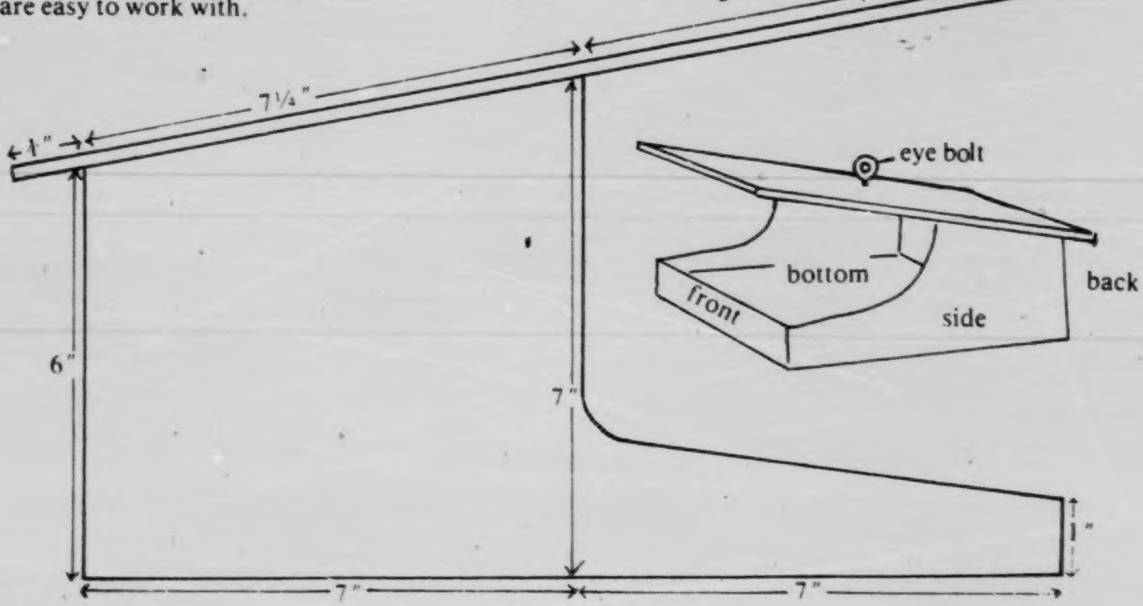
Directions:

1. Glue and nail pieces together.
2. Sand edges and paint.
3. Screw eyebolt into roof at balancing point and hang.

Feeders should be properly placed, filled with food, and left alone a few days. For a balanced food supply, provide commercial bird feed, millet, wheat, sunflower seeds, and heat- and energy-producing suet.

Once birds are fed, teacher and children must continue daily feeding and watering. If birds become dependent upon the center for food and water, they might starve if nothing is provided.





Free Publications

The following organizations provide free publications with information such as tips for observation, and how to attract and identify birds.

Fish and Wildlife Service
United States Department of the Interior
Washington, D.C. 20240

Garden Club of America
Conservation Committee
598 Madison Avenue
New York, N.Y. 10022

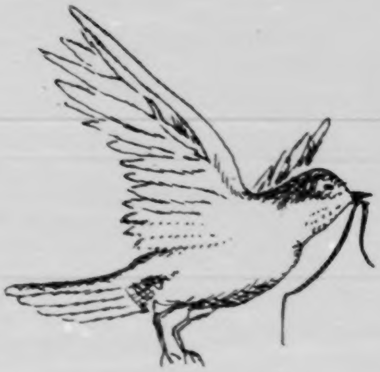
National Audubon Society
1130 Fifth Avenue
New York, N.Y. 10028

Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

U.S. Department of Agriculture
Soil Conservation Service
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

Nests

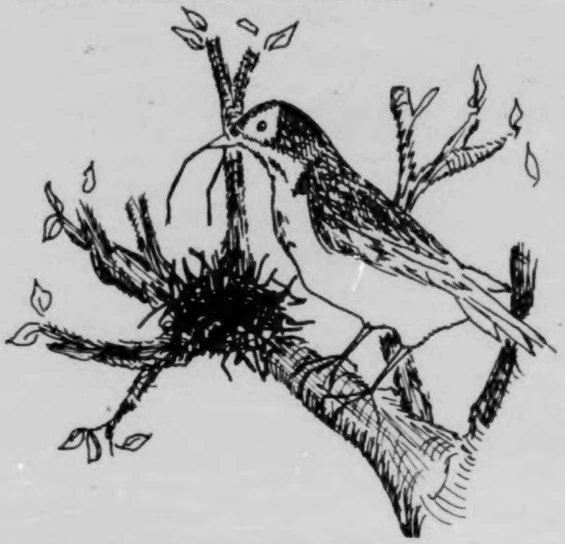
With great skill, birds build nests in which to hatch their young.



Each species of bird knows by instinct what to use to build a nest, how to shape the nest, and where to hide it from enemies. Usually the female works on a nest until it suits her, then lays eggs and sits on them until they hatch. Some father birds help build nests, keep eggs warm, and feed the young. Birds nest in spring and summer.

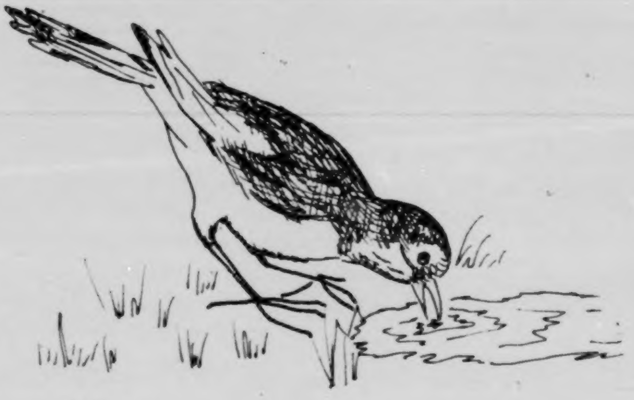
Look for last year's birds nests. Do not pull down a nest being used.

All birds can be interesting to study and watch. The children may want to choose one for more detailed study. It is best to choose a bird common to the area and often seen.



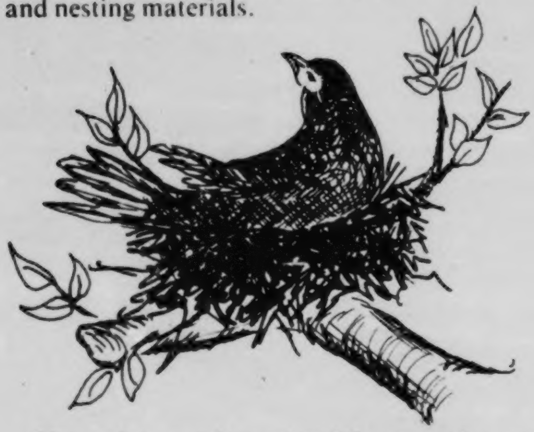
Robins usually build nests in trees or bushes, sometimes on building ledges or billboards. The female carries twigs and straw to make the bottom of the nest, plastering it together with mud carried in her beak. Next she searches for string, scraps of cloth, and paper, and flies back and forth with each piece, applying mud when necessary.

As the sides of the nest get higher, she sits in the center and turns and twists her body to make the inside of the nest smooth and rounded. Then she gathers soft grass to make a cushion for the eggs.

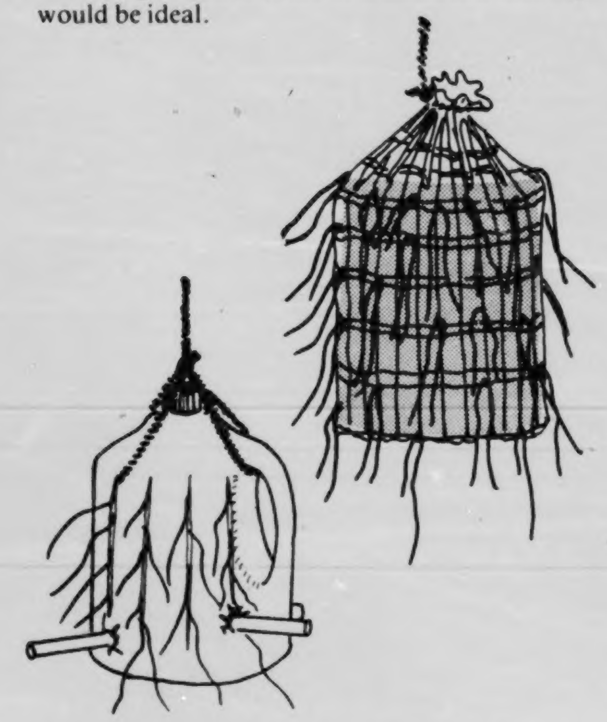


The nest looks shaggy on the outside and is camouflaged from the sharp eyes of any enemy.

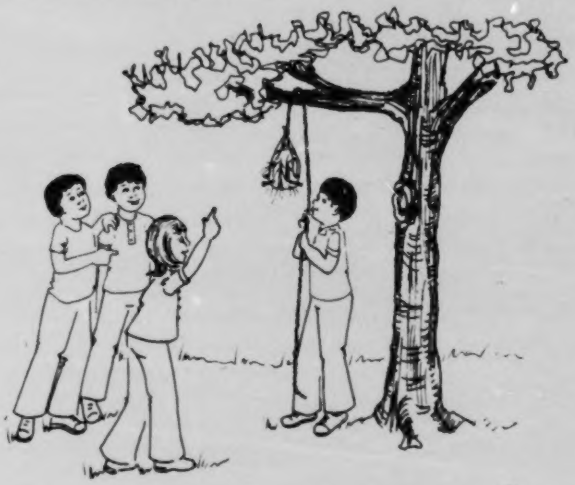
Discuss what the children could do to help a robin family. Consider putting out food, water, and nesting materials.



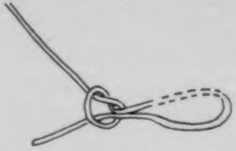
Plan what nesting materials to gather and where to place them to be easily found by the birds. For instance, make racks for holding nesting materials. Punch holes in a thoroughly clean, dry, plastic bottle. Or fasten loosely woven material to a frame. The kind of bag in which vegetables are sold or a discarded dish rag would be ideal.



To the rack, attach bits of cloth, string, paper, hair, dried grass, and bright yarn. Hang string or other items on bushes.



Place materials high where birds will notice them and where children can see the birds. If there is a suitable tree in the yard, loop heavy twine or a light rope over a branch. Or throw a small weighted sack over a branch. Tie the rack to one end and pull the rack high above the ground. Tie the other end of the rope to the trunk of the tree. (A slip noose works well.) A clothesline pole may be used instead of a tree.



Anything put out for the birds should be high enough so birds are safe from cats.

8. Nature Walks

Nature walks away from the day care center are fun for small groups of children with similar interests, who are accompanied by interested, responsible staff. If the children are willing, group knowledgeable children with beginners and enthusiastic children with indifferent ones.

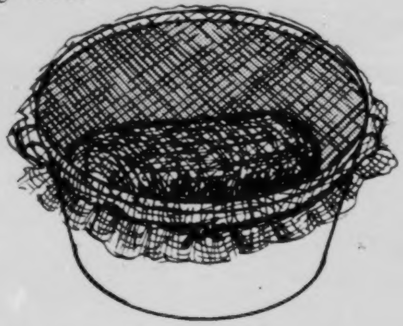
If necessary, large numbers of children could be taken to the site of a nature walk. Once there, divide into small groups, each of which has planned together and will work independently. Go to a place big enough to accommodate all groups without any group having to miss or wait for something. Otherwise the children will be competing rather than relaxing.

How many is a small group? It could be two children who require special attention, or as many as eight children. Any more makes it hard to share discoveries and difficult for the adult to supervise.

Do not go until the children are ready. They should already have been involved in nature projects and had opportunities for group decisions, making and following ground rules, and questioning.

Studying Nature in the Classroom

Bring things to the day care classroom or yard which might be found on a nature walk. For example, put a piece of a rotting log in a tub or dishpan. To prevent interesting insects from escaping, fasten nylon net over the open container until the children are ready to take the wood apart. Rotting wood contains animals and plants which are independent - like a tiny city. One might find moss and fungus, lichen, mushrooms, slime, mold — all feeding on the decaying wood.



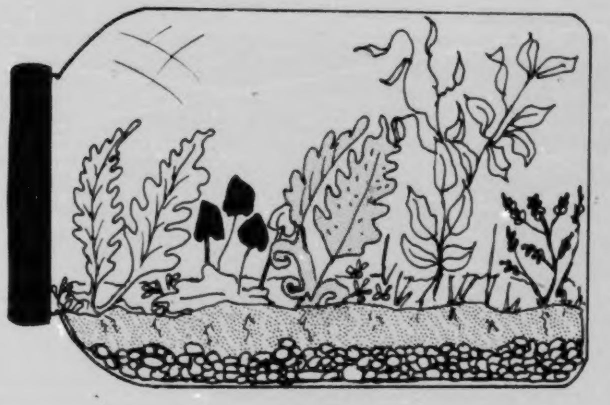
Ants, spiders, centipedes, millipedes, and pill bugs like to burrow in soft soggy wood. A salamander also might be uncovered. Take care to avoid scorpions.

Return the rotting log and its inhabitants to a place where the animals and plants can continue to live and thrive.

To make the experience more useful and enjoyable, keep lists: animals and insects found; the log's texture and how easy it comes apart; the size, location, and type of tree it came from. Compare and contrast with other logs.

The World In A Jar

Find a large empty jar with a lid. (Ask restaurants for pickle jars and mayonnaise jars.) Clean it, then lay it on its side and use rocks to prevent the jar from rolling.



Locate a stream or densely wooded place seldom occupied by people. Dig up a piece of earth about two or three inches deep without breaking it up with the shovel. The section should be covered with weeds, twigs, leaves, bugs, and tiny green plants. If there are no plants there probably are seeds which will produce plants.

Spread 3 or 4 handfuls of pebbles or charcoal in the bottom of the jar as a soil foundation. Set the soil in place and water it. Screw on the lid and seal with masking tape. Put the jar in direct sunlight. Natural life cycle processes will occur inside the jar. Water vapor will form, then drop to the earth in the jar just as clouds drop water onto the ground.

Plant life takes the CO_2 from sunlight and produces oxygen for animal life. This process is photosynthesis, discussed in the section on trees.

Compare the effects of different amounts of sunlight, more or less water, making a hole in the lid to let in outside air, adding bugs, worms, or other small animals. Use sections of earth from different locations.

Record what's seen. By watching what happens in the jar, children can learn about the world outside the jar.

Learning Outside The Classroom

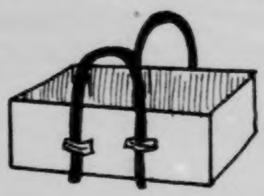
Locate special spots in parks, creek beds, woods, vacant lots, meadows, someone's backyard. Plan ahead. Know what to expect and where to direct the children's attention. If looking for something particular, an adult might secretly put it there before the walk begins. For example, an adult might move a rock from one place to another so it's more likely to be found.

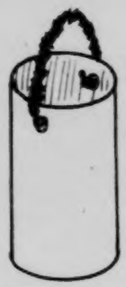
Smell the trees, the earth, the rocks. Look. Listen and discuss impressions.

Focus on changes and variations resulting from the seasons and the time of day.

Equipment

- resource books (paperbacks are easy to carry)
- paper for notes and plastic sacks in which to carry notes
- magnifying glasses and a net
- litter bag
- compost bag for gardeners
- collection jars if necessary (remembering that animals, healthy in natural surroundings, could die unless special provisions are made for keeping them)
- sturdy containers for the children to carry (handles for cans or boxes from cord or tape, braided panty hose, or rolled cloth)

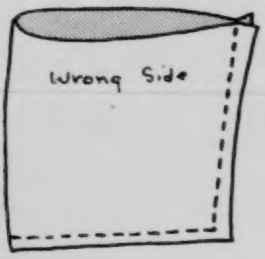




Support boxes by running handles under box bottom.

Making a Harvester's Bag

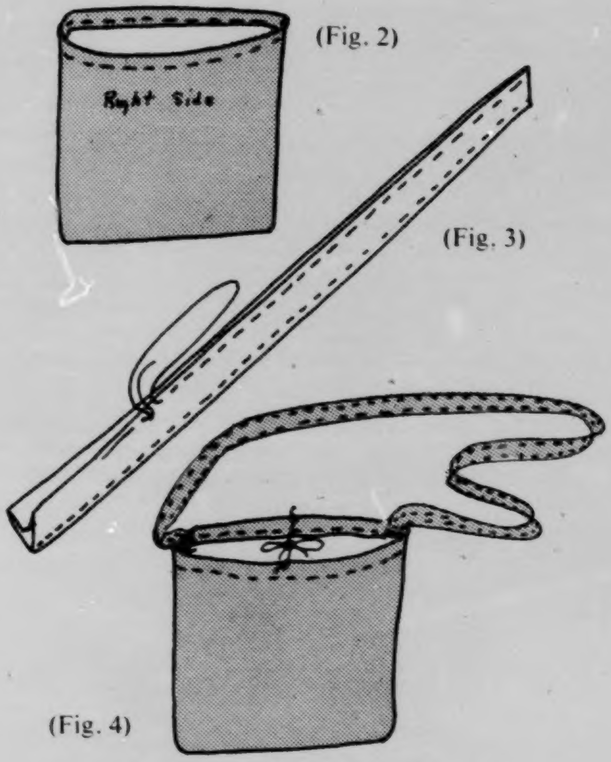
Materials: strong fabric – 1 rectangle 12 inches by 24 inches; 1 strip about 36 inches by 3 inches (size of bag and strap appropriate for size of child)



(Fig. 1)

Directions:

1. Fold right sides of fabric together. Sew across bottom and up side (Fig. 1).
2. Turn right-side-out and hem top (Fig. 2).
3. Fold in raw edges of strap and top-stitch close to both edges (Fig. 3).



(Fig. 2)

(Fig. 3)

(Fig. 4)

4. Tuck ends of strap into opposite sides of sack and stitch firmly in place (Fig. 4).
5. Close bag with heavy string tie.

Rocks

Some rocks have histories over a million years old. They can reveal much about the world. Examine their shape, size, texture, color, and variations. Try to imagine who might have used them to hunt for food or surround a campfire.

Rocks are fun to collect. The danger is collecting too many.

On some days, the children may want to look for limestone only. Limestone is made up of tiny sea-animal skeletons. Limestone fizzes and foams when acid is dropped onto it. So to identify it, carry an eyedropper bottle filled with vinegar. Or look for smooth water-worn rocks to paint or decoupage. Stream beds are a good place to hunt. Look for stones shaped like owls, mice, turtles, etc.

Pretty rocks may be worn as a pendant. (See Arts and Crafts section.) A rock is pretty because of color and shape. It will be more valuable if the child knows the rock's scientific name and how it was formed.

Much can be known about a rock by looking at it closely. Is it smooth or jagged? If it is smooth, how did it get that way? Where are smooth rocks usually found?

Rocks with holes or pores may be volcanic rocks which have cooled from a molten state. Inside, they may have bubbles of gases, trapped as they hardened.

Sandstone is made from compacted sand. Sometimes a plant or animal has been trapped in the rock and left a "picture" of itself called a "fossil." (See the illustration.) Fossils show what animals and plants existed long ago when the earth's crust was forming.

It takes a long time to shape rocks or make fossils. To help children understand a little more about them, two projects are included here. They may be done outside or inside at the center, or on the walk if desired. Protect working areas with lots of newspapers, protect hands with plastic bags, tied at the wrist.

Copying Fossils

- stiff cardboard box (cigar boxes are great), foil container or foil-lined pan
- plaster of paris (available at hardware store)
- mixing container and stirring stick
- water
- something, such as a shell, to make a fossil impression

Directions:

Make a creamy batch of plaster by slowly adding plaster of paris to a small amount of water. The more it's stirred, the faster the plaster hardens. Pour the plaster into the container and press the object to be fossilized into the plaster. Dry. (This also can be done with clay or play dough.)

Copying Rocks

Materials:

- plaster of paris
- sand, pebbles, mud, leaves
- twigs for mixing water
- mixing equipment
- cardboard box

Directions:

Add about half a cup of dry plaster to a cup of sand. Slowly stir this into a can containing a half cup of water. Add more water if necessary so the consistency is like bread dough. Pull off a small chunk and shape and mold it into a "rock."

Directions for making conglomerate rock (made of many substances, sometimes called "pudding stone"):

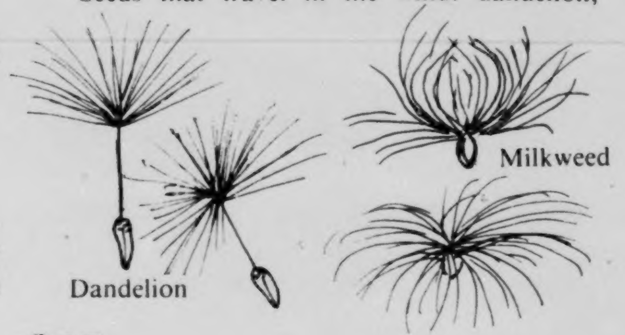
Add half a cup of dry plaster to a cup of pebbles and sand. Add twigs and leaves to the dry mix. Stir the mixture into a half cup of water. Mold.

Seeds

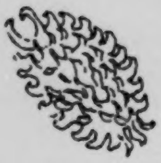
How does a meadow become filled with flowers? Flowers grow from seeds and seeds have amazing ways of getting around.

Milkweed and dandeloin seeds fly in the wind like little parachutes. Other seeds are eaten by animals, carried to new locations, and left in excretion. Birds often take a berry or fruit to a home tree or fence, eat the soft parts, then discard the seed.

Seeds that travel in the wind: dandelion,



milkweed, pine, maple, clover, thistels, Queen Anne's lace, yarrow.



Sticktight

Sticker plants: sticktights (a brownish yellow daisy-like flower), yellow clovers, hawkweeds, almost any small seed if given the opportunity.

Seeds carried or eaten by animals: berry, cedar, morning glories, thistles, knot weeds, filarees, partridge peas.

Texas Tracks

The free chart of Texas animal tracks from the Texas Parks and Wildlife Department is included in this section. Encourage the children to study it.

Then, while walking through the woods, stop and examine areas moist enough for tracks or footprints. Try to identify who or what made them and what they were doing at the time. Make up an adventure story about what might have happended.

Purposeful Feet

Animals have different kind of feet for different needs and life styles. Their tracks can show what they are, where they live, and how they move.

Cats, dogs, wolves, foxes, and other animals walk on their toes to sneak up on prey and to get away fast, if necessary. Cats and dogs have claws. Cat claws are sharp, can be drawn in, and are good for grabbing prey. Dog claws are blunt and can't be drawn in. They are useful for digging and scratching.

Because they spend so much time in the water, some animals have webs between their toes or flippers instead of feet. Webbed feet help ducks to flip upside down or paddle above or below the water.

Frog feet are perfect for swimming. Humans have copied them by making flippers.

Birds must cling tightly to their perches and scratch for seeds and bugs. Their feet have a "thumb" in the rear to grip with and claws to hunt for food.

Deer, sheep, goats, pigs, and antelope stand on two or more toes inside a cleft (split) hoof. These animals often run across hard-packed earth or rocky edges.

Muddy Toes

Find moist sand or earth and have the children take off their shoes. Walk slowly and examine the footprints. Then walk on tip toes. Compare the two prints. Compare prints made from skipping, hopping, running, and jumping. An animal also makes different prints depending on what it's doing.

The Hole Story

Children regularly find holes. They may wonder what made it and what lives in it.

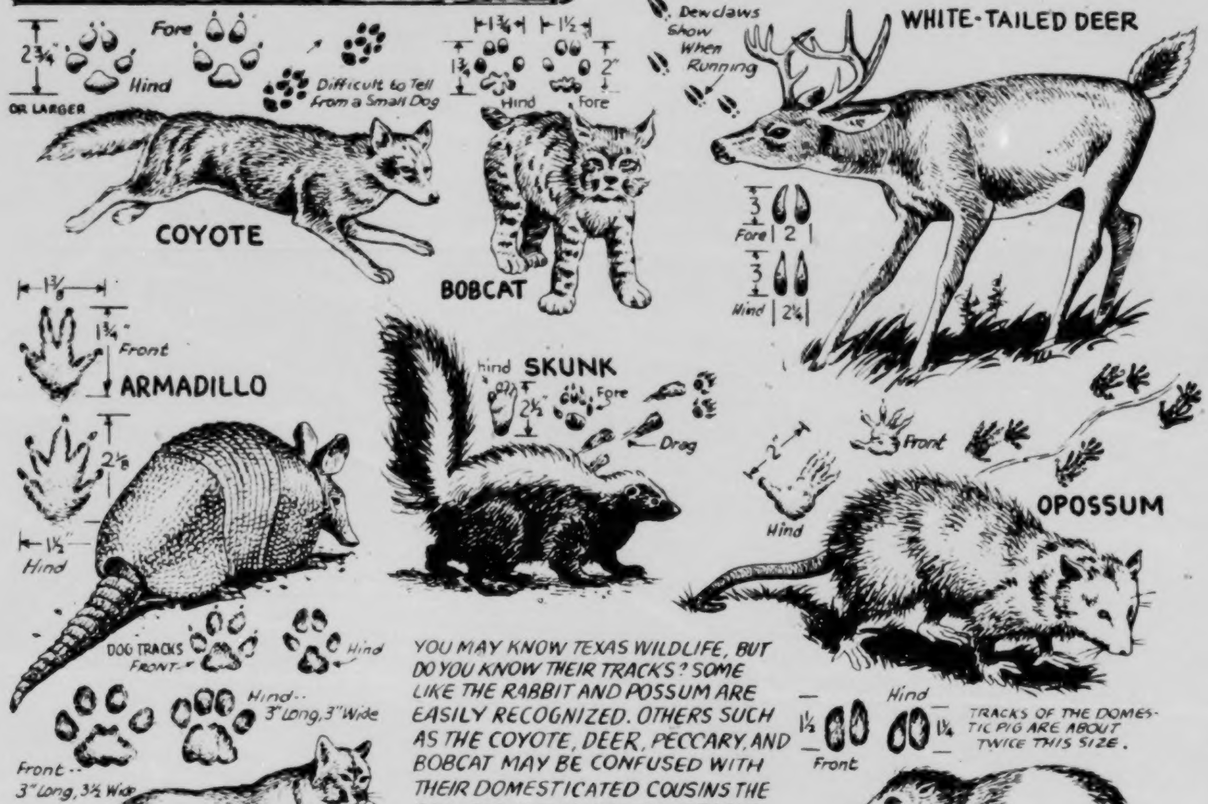
What's in the hole? The mystery is almost unbearable sometimes. But before they reach inside or get a stick and poke around, they should consider the damage they might do. An animal probably made the hole and will value and defend its home.

Many animals live in underground mazes. Even if they're seen going down into a hole, within seconds they may be far away. Or, they could be backed up into their tunnel, scared and angry.

It's fun simply *finding* holes.

Make a list of holes found on a nature walk. Note if they are man-made and where they are. Share and compare the list with friends. Are there more natural or more man-made holes in the area? Are the holes large or small? Are there footprints or trails around the hole?

TEXAS TRACKS DO YOU KNOW THEM?


2¾"
OR LARGER
Hind
Fore
Difficult to Tell from a Small Dog
COYOTE
1¾
1½
1¾
2"
Hind
Fore
BOBCAT
Dewclaws Show When Running
WHITE-TAILED DEER
3
Fore
2
3
Hind
2¼
1⅞
1¾"
Front
ARMADILLO
2⅛
1½
Hind
hind
SKUNK
Fore
2½
Drag
2"
Front
Hind
OPOSSUM
DOG TRACKS
FRONT
Hind
Hind
3" Long, 3" Wide
Front
3" Long, 3½ Wide
PUMA
Hind
1¼
1¼
Front
TRACKS OF THE DOMESTIC PIG ARE ABOUT TWICE THIS SIZE.
PECCARY
TRACKS OF THE DOMESTIC PIG
TRACKS OF A MONGREL DOG
TRACKS OF THE DOMESTIC CAT
Fore
Hind
JACKRABBIT
Hind
2½"
1½"
Front
COTTONTAIL RABBIT
Hind 2"
Fore 1"
TRACKS OF THE RINGTAIL CAT
RACCOON
Fore
Hind
4½"
FOX SQUIRREL
Fore
Hind
2"
RINGTAIL CAT
1"
Front
Hind

YOU MAY KNOW TEXAS WILDLIFE, BUT DO YOU KNOW THEIR TRACKS? SOME LIKE THE RABBIT AND POSSUM ARE EASILY RECOGNIZED. OTHERS SUCH AS THE COYOTE, DEER, PECCARY, AND BOBCAT MAY BE CONFUSED WITH THEIR DOMESTICATED COUSINS THE DOG, PIG, AND HOUSE CAT. TRACKS ARE EASILY FOLLOWED IN SNOW OR LOOSE SAND, BUT PRINTS MADE IN SOFT MUD ARE BEST FOR STUDY.

Reprinted courtesy of TEXAS PARKS AND WILDLIFE.

Here is a list of some things that live in or make holes:

* Moles love to dig holes - that's what they do best. Usually there's a mound above their tunnel.

* Shrews often are mistaken for mice. They also make mounds above tunnels.

* Weasels may be the quickest mammel. They often borrow another animal's burrow.

* Ferrets are a kind of weasel, closely related to the asian polecat.

* Wolverines are powerful and nasty-tempered animals.

* Otters usually make dens in soft river banks or in the bases of hollow trees.

* Skunks like to live in holes or hollow tree bases. Anyone who pokes a stick into a skunk nest will remember it for a long time.

* Badgers are fierce and powerful fighters who burrow and tunnel.

* Foxes burrow. There's the Kit Fox, the Red Fox, the Gray Fox, the Silver Fox.

* Coyotes dig shallow burrows or find caves to use as dens.

* Bears, wolves, skunks, mountain lions, bobcats, snakes, scorpions, bats, and other animals sometimes live in caves.

* Woodchucks are part of the squirrel family.

Other hole dwellers:

* prairie dogs
* chipmunks
* ground squirrels
* tree squirrels
* pocket gophers
* mice
* rabbits
* armadillos
* snakes
* insects
* spiders
* rats

There are also holes made by children, holes made for pipes, holes left when something is dug up. Some rocks and lots of trees have holes made by insects and woodpeckers. And, of course, worms are great hole makers.

Galls — Lumps, Bumps, and Clumps

In the U.S., there are more than 2,000 kinds of creatures who can eat their houses. The houses are called "galls." They are swellings on leaves, twigs, flowers, and roots of plants. Their inhabitants are insects, mites, fungi, and bacteria.

How do galls develop? There are many ways. The Goldenrod Gall is made by one kind of gallfly. The female picks a tender spot on a growing plant tip. She deposits an egg and flies away. The larva hatches, then bores its way into the plant. Then from its body it emits a tiny amount of special liquid which causes that part of the plant to swell. Soon the larva is surrounded by a gall house.

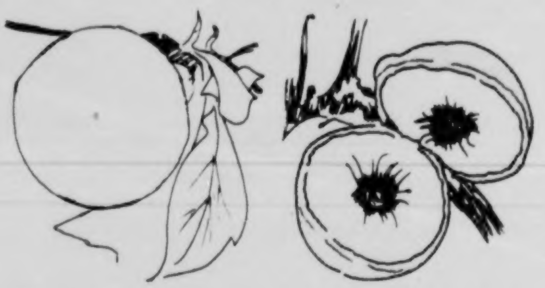
The larva eats away at the inside of its house all summer. In autumn, the plant dies and the gall turns brown and hard. Then the larva digs a tunnel to the skin of the gall but it does not break through to the outside. Instead, it settles down for a long winter's nap, safe from wind and cold.

In spring the larva becomes a pupa and then an adult gallfly. It breaks through the skin of the gall house to find a mate and start the cycle again.

Gall Hunt

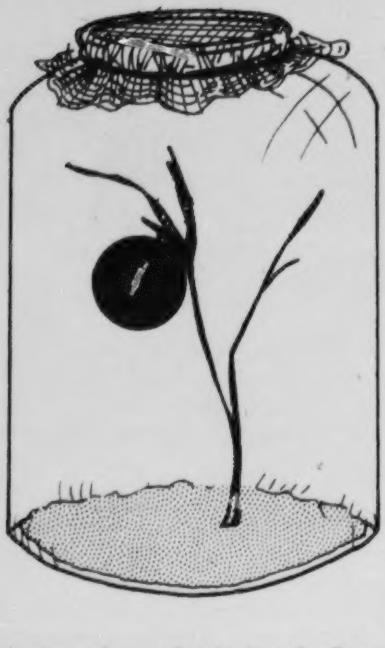
Find a patch of goldenrod and search for a gall. Look for a stem with a round swelling, or look for bunches of wrinkled goldenrod leaves. They'll look like a handfull of leaves squeezed into a ball. Willow trees have galls that look like pine cones.

Oak trees have different kinds of galls. Sometimes they are as big as apples and are called "oak apples." Oak apples look like wrinkled table tennis balls stuck to leaves. Bullet Galls on oak twigs are marble-sized or smaller, and hard.



First, find different kinds of galls. If they're cut open in summer, the larva will be hard to identify, so wait until the leafless months in late fall and winter. Then the larva or pupa may be inside and easily identifiable.

To see the adult, carry unopened galls to the center. Do not remove the galls from their twigs or stems. Place each into a separate jar with soil on the bottom. Stick the twig into the soil and be sure the gall has air. Cover the top with



cheesecloth and an elastic band. Occasionally sprinkle water on the soil. Keep the galls away from direct sunlight and overheated radiators.

The gall maker will come out while it is still winter because it's in a warm environment.

Adult galls do not eat so don't worry about what to feed them.

Don't surprised if nothing comes out of some of the galls. Wasps, beetles, or woodpeckers may have eaten them.

Harmful or Beneficial?

Some galls cause the leaves of fruit trees to curl. The plant then produces less food for itself and, therefore, less fruit. Another kind of gall-fly prevents clover from making seed. A gall called "Black Knot," made by a fungus, causes the branches of cherry and plum trees to swell and die.

Some galls, however, are useful. Bushmen of the Kalahari Desert in Africa make a powerful poison from crushed gall wasps. A small amount on an arrow tip will paralyze large animals to be killed for food. Farmers in Missouri and Arkansas feed oak galls to chickens, cows, pigs, and sheep. And on the roots of the clover plant are tiny roundish blisters. These are galls caused by bacteria. They take nitrogen gas from the soil and change it into a chemical which plants need.

Summer Swimmers In Ponds and Streams

On a warm sunny day, go down to the edge of a brook and see what lives there.

Turn over a rock and look closely. Is there something small and wet and wiggly? It's probably a Stonefly Nymph. A strange tube-like structure may be the head of a Caddisfly, which builds a home with tiny pebbles and bits of twigs. Another house builder is the fierce Dragonfly Nymph which eats fish twice as large as itself.

Animals like moving streams because the streams bring food and have a high oxygen content. See the *Pond Life Nature Guide* for more pictures of these animals.

Animals who live in fast moving streams:

- Blackfly Nymph
- Net-spinning Caddisfly
- Mayfly Nymph
- Stonefly Nymph
- Water Penny
- Hellgrammite
- Diatoms
- Cranefly Larva

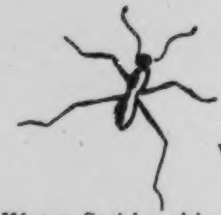
Animals found in slow moving streams:

- Dragonfly Nymph
- Water Strider
- Dameselfly Nymph
- Water Boatman
- Crawfish
- Fingernail Clam
- Burrowing Mayfly Nymph
- Bloodworm

To find these animals it's necessary to look carefully. They may hide from danger or streamline themselves to offer the least resistence to moving streams. From above, animals such as the Water Penny, which grows up to become a beetle, may look like scum or crust on a stone.

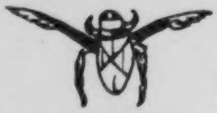
Not all insects are pests as are flies and mosquitoes. Many are harmless and beneficial. The Dragonfly, for instance, does a service by feeding on mosquitos.

There exists a balance in the world of water wildlife. Insects feed on plants, larger insects feed on smaller insects (even on small fish). Fish, frogs, and other animals feed on insects. This balance controls the insect population in a natural way. When humans interfere with the balance, there can be problems.



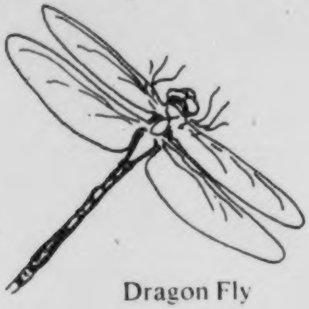
Water Strider

The *Water Strider* skips over the water and leaps into the air to catch mosquitos. The fur on its long thin legs keeps it on the surface and tiny feet make dents or dimples in the water.



Boatman

The *Black Swimmer* and *Boatman* are athletic. They row with oar-like hind legs. The Back Swimmer is the best back-floater in the water – it swims upside down. It can bite, so be careful. The Boatman swims upright, feeds on plants, and is harmless.



Dragon Fly

Dragonflies and *Damselflies* are beautiful and graceful. They maneuver like hummingbirds when hunting mosquitos. Dragonflies are friendly and seem to like people. They are harmless and fascinating to watch. If one lights on the top of a fishing rod, it's said to bring good luck fishing. The Damselfly looks like the dragonfly except it is more slender, slower, and closes its wings when landing.

The comedians of the pond are the little *Whirligig Beetles*. They look like a colony of watermelon seeds playing bumper cars. Their antennae keep them from running into each other. Their eyes are like bifocal glasses: the upper half is to see far away, the lower half to see up close.

If an insect approaches, has a wingspread of four or five inches, and looks fierce, it's a *Dobsonfly*. The female has a sharp bite. Bass fishermen use the larvae of this insect for bait. The larvae can bite, too.

Diving Beetles are the biggest of the water beetles. They grow to about three inches. They are fierce hunters of other insects and look fearsome. Their sharp jaws contain a digestive juice that is pumped into a victim's body, dissolving the body into a soup which the diving beetle sucks up, like soda through a straw. Sounds horrible, but don't worry – diving beetles don't eat people.

Insect Search

Materials:

- shallow light-colored pan or dish
- magnifying glass
- dipping net

Directions:

Take a big scoop of mud from the bottom of the stream and put it on a tray. With a stick, poke through the mud to find anything moving. Hellgrammites, bloodworms, and caddisfly in their stone cases, often rest on stream bottoms.

Stretch a net across the stream. Quickly scoop it along and then up. Examine what's been caught. It may not be much and will be hard to see. Use a magnifying glass to isolate and inspect it.

How much of what's been found is man-made and does not belong in the stream? What damage might polluntants cause?

Playing Games on Nature Walks

Games are fun on nature walks, and good for lulls in activities. Games also can be a way to learn about nature, and may be played using natural objects as props.

For example, school-agers could pantomime physical reactions of people who:

- burn bare feet;
- hear a bee buzzing close to their heads;
- see a strange insect on their jeans;
- smell a wild mustard or onion plant;
- feel something soft and warm in their pockets;
- feel something mushy.

Each chooses and does a pantomime and others try to guess what is being pantomimed.

Finding and Using Natural Materials

People always have used local natural materials. Materials and products made from them can be purchased, but why pay unnecessarily?

Teach the children to consider how natural materials might be useful. Look through this guide for suggestions. Children may gather materials haphazardly, or could look for specific items for particular purposes.

The children will find items for games, crafts, collections, containers and many other purposes.

Examples:

* for a collage: small objects such as burrs, seed pods, galls
* berries for making dye
* for weaving: palm fronds, cattails, rushes
* twigs for making stick figures
* dried grasses and flowers for decorations
* driftwood and weathered wood for jewelry or natural sculptures
* small dry branches or flower stalks to use as decoration

Use nature's discards. Take a piece of dried bark from the ground but not live bark from a tree. Pick a few seeds, but not all - leave some for the animals and some to start new plants. Never tear or mutilate. Be careful with plants that seem dead - their roots may be alive. Help children understand the importance of taking only what can be used.

Transporting Materials

Consider how an object must be handled to retain shape and appearance. Also, prevent hassles by using labels.

Each child could carry a harvester sack (discussed previously in this section). Small boxes containing light packing material could hold delicate items such as tiny shells, bird feathers, a wasp's nest, an arrowhead, or a single seed pod.

Dried flowers and seeds attached to stems, reeds, grasses, and small bare branches can be tied together where they are gathered. Bunch like things together. Carry them upright in large sacks or boxed flat between layers of newspapers, so they are ready to hang in a planned place at the center. Materials to be used for dyes need not be treated so carefully.

At the center, spread green or damp items on absorbant material on a flat surface or hang them so they will dry and not mildew.

Wrap and carry dirty items in plastic. Then wash them down in soapy water, rinse, and dry. Clean mildewed items in a baking soda solution, then rinse.

Schedule time soon after the nature walk to care for things taken and found on the nature walk.

Found items may be one child's property and shared, or placed with other day care resources.

Safety

Before going outside the children should know what's expected of them. Safety rules should be understood and appreciated. Adults also must know and show respect for rules.

Suggested Safety Rules

* Everyone must stay with the group unless the leader gives permission otherwise.
* At a previously discussed signal, everyone must pay attention to the leader, regardless of what's happening.
* Children may not put anything in their mouths without the leader's permission.
* No one may approach or pet an animal without the leader's permission and supervision.
* Foot covering is to be worn at all times except when the leader and children agree otherwise.
* No one may get within five feet of a body of water without supervision.
* Carry plastic rather than glass containers.
* Do not unnecessarily disturb a natural area. (For example, don't trample plants.)
* Do not reach into or poke objects into a hole.
* Be careful when overturning rocks and logs. If an animal or insect is disturbed, allow it to go its own way.

Other Precautions

* Carry up-to-date emergency information on every trip. List full names, addresses, phone numbers of all people on the trip, and people to be contacted in emergencies, including doctors, fire department, poison control, hospital, ambulance, police.

* Have a quick and clear way to call the group together, such as a whistle. Have signals such as 3 quick blasts to call for help and 2 long blasts to announce interesting discoveries.
* Check frequently to be sure everyone is accounted for.
* Carry a first aid kit and know how to use it.
* Make provisions for bad weather.
* Consider how to dress. For example, if there's to be wading, take old tennis shoes.
* Have a staff member scout the area to look for poison ivy, poison oak, nettles, and other plants that can cause discomfort. From a distance, point out the poisonous plants to the children so they can learn to avoid them.
* Familiarize the children with the area's poisonous insects, snakes, and plants. Teach them to be careful.

9. Garden Grower's Guide

A garden can provide lots of pleasure without much work or expense. Also some vegetables! Not enough to reduce a grocery bill but enough for some new and satisfying experiences.

Walk around the yard and roughly measure it. Picture blooming flowers, growing vegetables, trellises, garden benches, raised beds, and arbors. That can be the goal!

Don't be discouraged by the work necessary for a productive garden. Plan far into the future a little bit at a time and do it well.

Resources

Contact a county agent for free booklets on gardening, information about obtaining catalogues, advice about which plants grow well in the area and mature rapidly so the children can appreciate the growth cycle, information about planting time, plant varieties, beneficial insects, and other interesting and informative subjects.

Check the library. Browse with the children. Invite a county agent or some other experienced person to help plan gardening for the six months beginning in September.

See the bibliography and list of other reading material at the end of this section.

Planning

1. Decide where the garden will be.

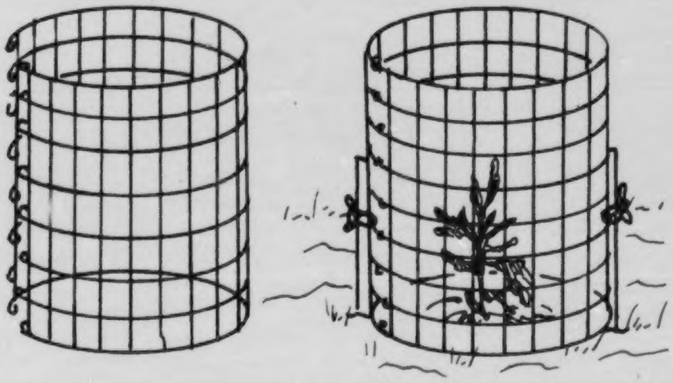
Consider the availability of sunlight at different times of year, water, and drainage.

If plots are narrow, gardeners can work without stepping on anything. If children have different interests and want to work independently, consider having several small plots.

Look for a place out of traffic. If that isn't possible, plan how to protect the plants from traffic. A row of bricks or cedar boards will work. Or inexpensive chicken wire or goat fence, three or four feet high on posts, will protect the garden. A *wire cage,* as shown below, will protect and support plants, and save space.

Materials:

* large mesh fencing (goat fence), 4 to 6 feet high and 6 to 7 feet long
* 2 or 3 stakes, each 3 feet long



Directions:

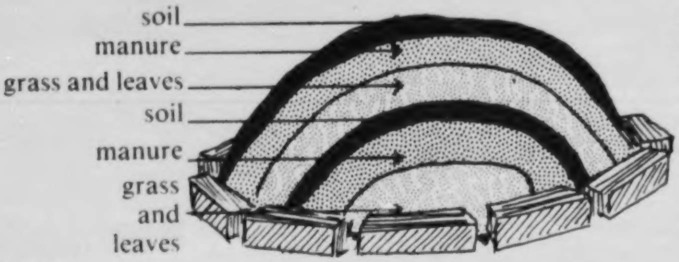
Bend cut ends together to form cylinder. Place cage over plant and keep in place with stakes pounded into ground outside of wire. Tie wire to stakes with cord or nylon stockings.

2. Make boundaries and prepare the soil.

Measure the garden area exactly, and dig only in that area. Turn the soil to a depth of at least a foot and remove stones, roots, and debris such as bottle caps. Sometimes this becomes a treasure hunt because very interesting objects turn up!

The border mentioned above will keep garden soil in and unwanted grass out.

Fertilize the soil with decayed organic materials. Leaves, grass, clippings, vegetable and fruit parings, and manure are available. Chopping or shredding speeds up the decaying process. Chemical fertilizers do not build rich, fertile soil as well as organic material.



A *compost pile* consists of layers of chopped organic materials, including manure and soil, kept moist and regularly turned to permit air circulation. The decayed materials then are worked into the soil before planting or dug into the soil's surface around established plants.

Grass clippings and pulverized leaves may be dug into garden soil to decompose at least a few weeks before planting. Allow more time for manure to decompose, so as not to burn tender roots.

3. Decide what to plant.

Texas summers are very hot and dry; the middle of summer is not the time for a garden in most areas of the state. Tomatoes, okra, corn, squash, and melons do well in June and July. But carrots, cabbage, lettuce, peas, and beans should be nurtured in the spring and fall.

Find our what the children are interested in.

4. Arrange for tools.

Try to have a hoe, spade, rake, string, markers, a hand cultivator, a trowel, and gardening gloves. Keep tools sharp. Use a file at an angle across the cutting edge. Use stong tools not too heavy or large. Carry them under the arm with blades or teeth down. Lay tools on the ground face down to prevent accidents.

5. Determine when and how to plant.

Once an area is ready, mark off sections with stakes and string. Use packages or other markers to show where everything is to be planted.

Don't vary from the planting instructions. There are important reasons for each. For instance, some plants will not pollinate unless there are at least two rows.

Take into account the space each vegetable needs. Radishes and lettuce, for instance, take up very little space. They grow rapidly and, once picked, the space can be used for other plants. Beans and tomatoes take up a lot of space but have a high yield per plant. Corn takes up lots of space and gives a lower yield.

Plan so there will be food to harvest every week. Seed packets generally list the number of days it will take a plant to mature and reach edible size. A continuing harvest will keep the children interested and prevent a sudden avalanche of vegetables to be picked and eaten.

6. Plan to water, mulch, and thin the plants.

A misting nozzle is a good investment, because it can water without washing seeds away. Do not water too much. Soaking once a week will enable plants to develop deep root systems. Dig trenches between rows of plants and fill with mulch. This allows water to run off easily but remain in the ditch to supply the plants longer.

Mulch is organic material spread over the top of the soil to retard evaperation, keep soil cooler or warmer depending on the season, and prevent weed growth. In addition to the leaves and grass already mentioned, layers of newspaper may be used as mulch. They will rot gradually and can be dug into the soil before the next growing season.

Follow planting instructions for thinning out the plants. It's necessary to overplant because not all seeds germinate. Thinning out healthy plants is hard because it's natural to want to keep them all. But overcrowding hinders growth. Besides, the plants removed may be eaten.

Planting

Plant in relation to insects and other plants. Some insects such as earthworms and bees are beneficial. Use poisons which won't harm these insects or the plants.

Companion planting helps to control insects and some plants seem to grow better when planted close to others. For example, Marigolds and herbs and members of the onion family help repel destructive bugs. Radishes flourish when planted between rows of lettuce. Plant parsley near tomatoes.

Pest Control

Use "natural pest control" instead of poisonous insecticides. In other words, hand-pick weeds, or use other insects to destroy harmful ones. Never taste seeds. Many have been treated with poisons and insecticides. And fertilize with compost instead of commercial preparations — many insecticides and fertilizers are poisonous to the touch.

Make a natural spray for insects. Select strong odor plants such as garlic, onions, or hot peppers. Blend equal amounts of water and plants, and soak for several hours. Strain off liquid. Mix one teaspoon of liquid with a pint of water and put it in a hand sprayer. Be careful not to get the mixture into anyone's eyes.

Bring ladybugs and praying mantis to the garden. They live on mites and other bugs who eat plants. Fireflies will eat snails which are a nuisance. Crickets will eat almost any plant, so keep them away. Snakes eat mice and gophers which can wipe out a garden quickly. Check the section on snakes. If not bothered, some are safe! Wasps help by stinging plant-eating caterpillers. Bees are especially useful - they pollinate many plants.

Attract birds to the garden with a bird feeder or by planting flowers (e.g. sunflowers). They provide color and song, and have healthy appetites for insect pests.

Harvesting

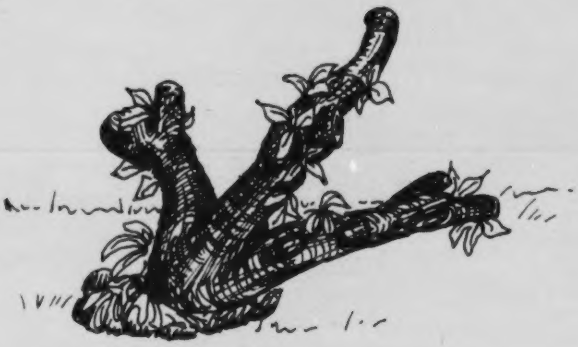
To harvest, pick or cut plants carefully. Plants such as squash will keep producing if vegetables are harvested young and removed with care. Use carrot tops and radish tops for salads. Summer squash is good raw with dip. Put unused portions in compost for next year's garden.

Preventing Vandalism

Gardens will have a better chance for survival if centers are near the school-ager's homes. School-agers will protect their interests and get others to help.

If the children think vandalism will be a problem, listen to them. Consider using containers which can be locked inside at night and on weekends.

Combining Gardening With Other Day Care Activities



How about a large weathered wood decoration for the garden or yard? Simply glue and nail interesting small pieces to a larger piece. Do not paint. Plant beans at the base.

See the foods section for interesting ways to use vegetables.

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Other Reading Materials

Government Publications

Typical Poisonous Plants. #077D. 70¢. 23 pages. (Includes discussion, illustrations, and antidotes.)

Make Your Own Terrarium. #206D. Free. 2 pages.

Mini Gardens for Vegetables. #279D. 35¢. 12 pages.

Lets Plant a Tree. #278D. Free. 24 pages. (From seedling to sapling, includes suggestions for learning about the environment.).

Keeping the Bugs Out Naturally. #205D. Free. (How to protect plants with pesticides.).

Outdoor Safety Tips. #317D. 35¢. 12 pages. (Pocket manual. Survival and safety for campers and hikers.).

To obtain these publications or more information, write:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

Check with the local library for a montly catalog which lists all government publications.

Free from Texas A&M

The following publications are free and can be obtained by writing Texas Agricultural Extension Service, Texas A&M University, College Station, Texas.

Annual Flowers in the Home Landscape
Disease Prevention in the Home Garden
Garden Calendar
Home Gardening In Texas

Other Free Materials

American Forest Institution
1619 Massachusetts Ave., N.W.
Washington, D.C. 20036
Grade Level: All
Description: One large poster and several small ones on tree growth. All in color.

Chevron Chemical Company
Public Relations
200 Bush Street
San Francisco, CA. 94120
Description: A Child's Garden. Excellent guide for helping children plant a garden.

CIBA - GEIGY Corp.
Public Relations
Ms. Betsy Bennet
Saw Mill River Road
Ardsley, New York 10502
Grade Level: 2-5
Description: Two posters: "Plants That Poison" and "Animals That Sting."

Friends of the National Zoo
C/O National Zoo Park
Washington, D.C. 20009
Grade Level: 1-6
Description: Four books on mammals, reptiles, amphibians, and vanishing animals. Easy to read and understand.

National Wildlife Federation
1412 Sixteenth St., N.W.
Washington, D.C. 20036
Grade Level: 4-6
Description: Booklets, stamps from copies of "Ranger Rick Magazine," other good stuff.

Shell Film Library
1433 Sadlier Circle West Drive
Indianapolis, Indiana
Tel. 317-291-7440
Grade Level: All
Description: List of films, descriptions, order forms.

Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas
Grade Level: All
Description: Twenty-five full-size, color portraits of animals found in Texas, plus information and booklets.

U.S. Department of Agriculture
Agriculture Resource Service
6505 Belcrest Road
Hyattesville, Maryland 20782
Grade Level: K thru 12
Description: Science study-aids. Books on environment and mini gardens. Experiments.

U.S. Department of Agriculture
Forest Service
South Building
Washington, D.C. 20250
Description: Large chart on what's obtained from trees.

U.S. Environmental Protection Agency
1600 Patterson Street
Dallas, Texas 75201
Description: Nine colorful, large posters on nature and plants.

Ward's Natural Science Establishment, Inc.
P.O. Box 1712
Rochester, New York 14603
Description: How to lead a field trip, build plant collections, inject materials, prepare skeletons, etc.

DAY CARE
for School-agers

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Community Resources

1. Overview

Different communities will have different resources valuable to children. Help the child become involved with resources, learn about them, develop pride in knowing about them. Someone living on flat plains can learn to appreciate the beauty of sunsets and watch cloud formations move from one horizon to another. One can't do that in the hill country! But there is that which is unique about the hills, about thick, tall pine forests, about oak and cedar thickets. There's the special fishing and shrimping on the coast, the shells on the beaches, and plant and animal life everywhere.

It's good to discuss the disadvantages of an area too — and how to compensate for them. Some drawbacks are man-made problems: tar on the beaches, trash in the forests. Others are natural, such as fallen trees, tornados, dust storms.

Children have the drive to "make things right." Take advantage of this. If they decide a park or forest trail needs to be cleaned up, what better project than to make plans and go ahead. They will enjoy and take pride in their work. And people in the community will enjoy giving credit where credit is due.

2. Agricultural Resources

Some enriching experiences for children are available to them during summer months when agricultural products are ready to be harvested. If possible, visit a farm where the group can become involved with the work.

- Look at fields around the community to see what is grown: vegetables, cotton, maize, peaches, etc.
- Visit a farmer, decide on the time and structure for the visit.
- Agree on rules, length of stay, supplies and equipment — first aid kit, water jug or individual water bottles, sack lunches, clothing, etc.
- Have group discussions about respecting private property, land, implements, plants, and produce.
- Follow up with a thank you from the group to the farmer.
- Follow up on interests shown by the children. Help them find other ways to learn about new interests.

On the farm:

- Cotton — When cotton is ready for harvesting, the children can pick it, preferably with a large sack so they can go from plant to plant. Then see how harvesting can be done by machinery. What else is done to the cotton on the farm? Then where is it taken? Is there a cotton gin? A cotton baler?
- Peach Orchard — Ask the farmer to show the children how to tell when peaches are ripe, how to handle them. Let the group do the picking — how long does it take to pick a bushel of peaches? How are the high ones picked? Probably the children will be given some peaches for their work. They may want to eat a fresh peach. Then if you have more, let the group peel and slice peaches for a cobbler or for ice cream. Or make peach preserves.
- Corn — Fresh corn from the field is fun to cook and eat. Ask the farmer for instructions on cutting corn from stalks, then give the group a chance to harvest the corn. Watch how machinery is used. Learn about corn's maturing — when to pick it. What is the rest of the stalk used for? If enough corn is obtained, let the children try cooking it two ways: to boil, shuck the corn, remove silk, rinse cobs, and cook in boiling water 8 to 10 minutes; for roasting, see "Fun with Foods," Section F.

Save the shucks and silk to make corn husk dolls or to use in weaving. See "Arts and Crafts," Section I.

3. Cultural Resources

Every community has resources for discovering how things are made, how life was lived in the past, man's creativity in arts, crafts, music, dance, drama. All of us are enriched by such discoveries. Some of us will be stimulated by a particular area and hopefully can have chances to pursue this interest.

A small community may not have a museum, but people will have collections of old farming implements, household items, etc. These can be fascinating to a group of children. Probably the owners will have interesting tales to tell. Ask around, see if there may be:

- ladies who have a regular quilting bee;
- people who get together to practice musical instruments;
- a barber-shop quartet;
- an artist who would not mind observers, or an art collection;
- a theater group — get backstage to see what it's like;
- a dance company or class — see limbering up exercises, routines, and the dancing and participate if possible;
- a potter who uses his hands and a wheel and kiln to shape and carve pottery.

It is important to help children appreciate museums. This involves knowing what is there, picking an interesting area and talking about what to expect before going. It will help to see and talk about a small area rather than hurrying everyone through a whole museum. Some children would enjoy periodic visits to a museum and this would be an excellent project for a volunteer.

Libraries offer opportunities to become absorbed in everything imaginable. Checking out books weekly is important for summer programs while children are away from school libraries. A volunteer could help by taking four or five children to the library and guiding them to appropriate reading material. If someone wonders how to make something or how to play a certain game or wants a story to read, a trip to the library may be the thing. Also, many libraries have records, art prints, puppet shows, slide presentations, and special exhibits.

We are fortunate that America includes so many people from other countries who can share first-hand experiences. Find some of these people in the community. Ask them to come to the center.

Possibilities:

- Wear native dress — such as the sari, the dress of women in India.
- Show examples of foreign toys or games. Teach the children how to play the game.
- Sing a typical children's song or folk song from another country and encourage the children to sing along. A foreign language is fun to try and easy to remember when singing.
- Demonstrate a musical instrument and dance of a particular country. Teach the dance.
- Cook a foreign food. Involve children in its preparation.

4. Vocational Resources

Many vocations and professions are common to most communities. Some are unusual, depending on locale. Help children become acquainted with types of work. Expose them to farms, post offices, grocers, fire stations, police stations, and the people who work at these places. Discuss these vocations.

What other types of work can be found in the community? Talk with workers and see what can be observed while in progress.

- *Woodwork shop* — Machinery and hand tools can be fascinating to see being used, as can be the development of some material into a final product.
- *Plumbing* — See what it's like to dig in the earth to find pipes, cut and thread them, fit them together. What about all the sizes and shapes of pipes, fittings, washers, etc.?
- *Journalism* — See the presses, how they are set and run. Perhaps the children can handle some equipment.
- *Radio Broadcasting* — Everyone's heard a broadcast, but how is it done? Who talks on radio? What equipment is needed?

5. Recreational Resources

Swimming

In many communities, a parks and recreation department or the American Red Cross offers free swimming lessons. Swimming is a valuable skill. Many day care centers arrange for children to have swimming lessons as part of a regular summer schedule. If a citywide program is offered, locate the pool nearest the center and make arrangements. Sometimes the director of the program can enroll children with parents' permission; sometimes the parents must enroll the children. Usually, children in centers are put into regular classes, but it may be possible to set up special classes. If there are no citywide programs, locate a private pool and a licensed Red Cross instructor. Summer is a time for swimming and children should have a chance to develop skills to safely enjoy water. Most large city pools are centrally located and parents might be able to help with transportation. Or check city bus schedules and find out about special rates. Sometimes churches have buses for community service programs or there may be church people who would provide transportation. Written permission from parents must be obtained for water activities and for using public or private transportation.

Parks

A park can be relaxing and stimulating, whether it's a playground, picnic ground, hike and bike trail, or wilderness area. It's fun to move from normal, daily routines to such a different setting.

Busy family life often means only weekend trips to crowded parks. This is not the same pleasant experience as is a quieter weekday outing. Take advantage of the time. Enjoy parks with the children.

Discover what is unique to a park area. Notice buddng trees, tadpoles in the creek, flowers and clouds. Parks are places to run harder, swing harder, yell louder, and yet can be peaceful spots to relax, rest, and move slowly. They are places to feel good.

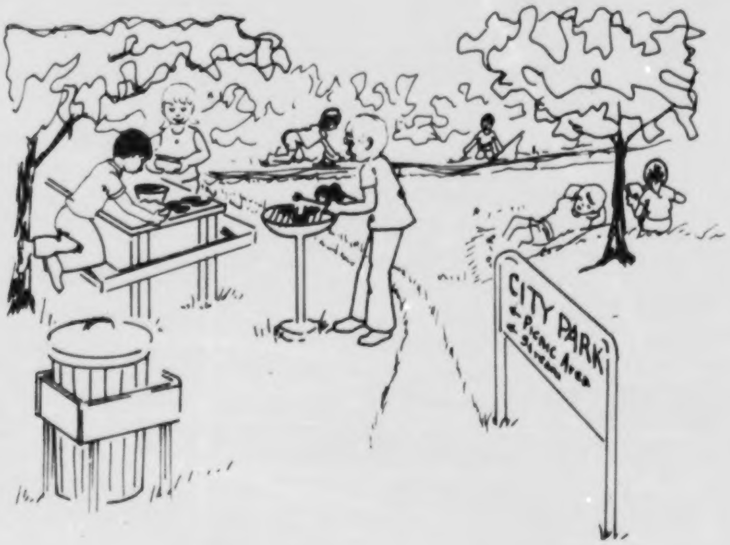
Learn about park rules and regulations. Discuss what makes parks nice and what can be done to keep that way.

Being out of doors increases the appetite, so plan a snack or meal while in the park. If water faucets or fountains are not available, take a large water jug. Creek water and river water are okay for washing but should be boiled before drinking.

Some parks have cooking pits, grills or areas for camp fires. These could be especially useful for older children. They could learn cooking over an open fire, how to build and put out a fire. Boy Scout and Girl Scout handbooks offer information and instructions on outdoor cooking and camping.

Be familiar with park trails. It's easy to get lost.

Know about poisonous plants or snakes which may be in the area. Learn how to dispose of trash. Are there trash cans? Can food pieces be left for birds and other animals? Can trash be burned or buried, or should it be taken to the center?



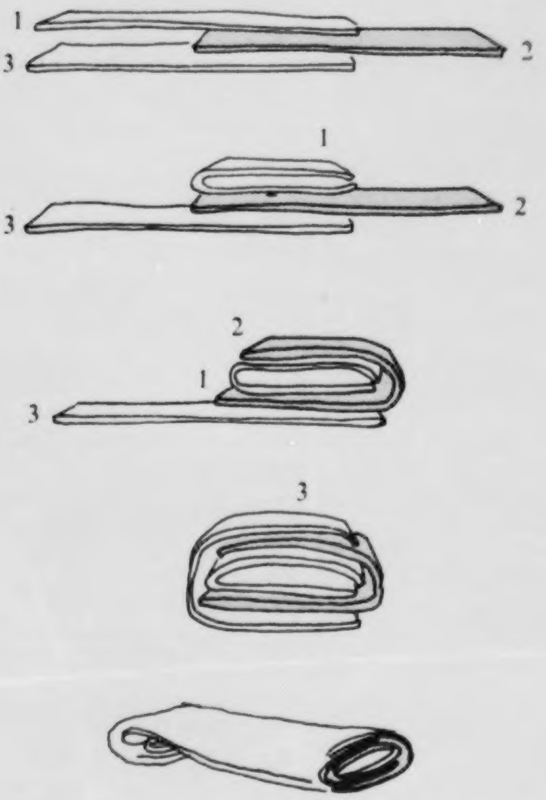
Overnight Camping

Consider a camping trip for older children, particularly as a summer-program activity. Find out which parks allow overnight camping and what facilities are available. Then make plans with the group.

Sack lunches are good for the first meal. Plan what to cook for supper and the next day's breakfast. What utensils are needed? How can food be stored for protection from heat, insects, and animals?

Bed rolls can be made from blankets and spreads. Get plastic bags from cleaners to put under bed rolls and absorb ground moisture.

Lay blankets or spreads as illustrated. Fold back spread #1 over itself. Fold #2 back over #1. Then fold #3 over the top. Tuck under end of bedroll so feet won't slide out.

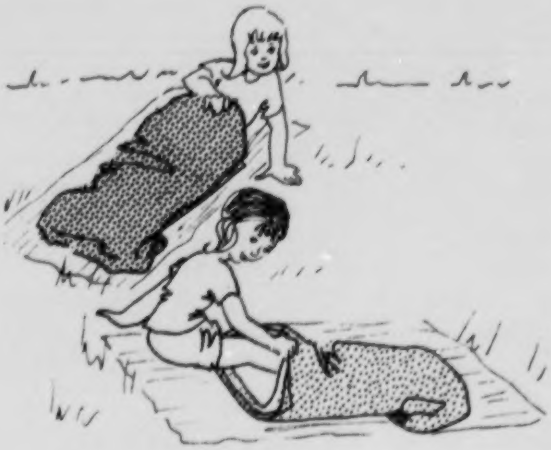


Spread bedrolls out in the open to see the stars and clouds. Under trees, leaves and insects might fall onto campers.

There may be toilet facilities. If not, dig a pit latrine.

Remember the first aid kit!

Refer to scout handbooks for help in planning camp-outs.



6. Volunteers

To use volunteers well is an art which can reap valuable returns. Volunteer services can benefit program and children, parents and staff.

Everyone is a potential volunteer – teen-agers and senior citizens, men and women, parents and neighbors, Girl Scouts and Future Farmers. Thre is a need to inform the public about what's needed to provide quality care. Then people will see why volunteers are needed. Appeals for help always should be based on real need. Volunteers should feel that services are needed and appreciated.

Consider a program's goals and specific ways volunteers can be useful. A plan for the use of volunteers is essential for volunteers, staff, and children. An invitation to "just help out where something's needed" often leads to a volunteer's being overused or underused.

Training

Training for volunteers should include:
- overview of routines and the group;
- consideration of the center's rules and limitations;
- tour of facilities - volunteers and children need to know where to find and return things;
- discussing that children should be encouraged to solve their own problems, determine rules for games, develop skills, develop respect for the abilities an possessions of others;
- specific assignments such as helping a group play kickball, listening to a child read, or taking a group of children to the library;
- emphasis on the importance of being reliable - children and staff depend on the volunteer and plans are made accordingly;
- instructions for calling when sick or otherwise unable to come;
- deciding work hours.

Roles for Volunteers

Volunteers can:
- be a friend - listen and talk with children, explore the world with them, listen to them read and read to them, help with their schoolwork, tutor when help's needed;
- share a culture - foods, dances, music, costumes;
- share talents and skills - cook with the children, play a musical instrument, teach folk or square dance, help children learn to use woodworking tools and build something for the center, teach knitting or sewing, help children prepare, plant, and maintain a garden, take several children to fish or hunt for fossils, teach piano or guitar;
- lead a special group or club - 4H, Boy Scouts, Girl Scouts, drama or dance group - help children develop interest and pride in working together;
- work with a handicapped child on prescribed therapy and involve the child with the group;
- supervise activities so that paid staff can have training sessions and breaktime;
- supervise children while parents and staff are having conferences.

An ongoing relationship between children and volunteers is best. But sometimes volunteers are available for one or several short-term visits to the center in order to:
- promote interest in vocations and professions;
- acquaint children with the equipment, supplies, and procedures for vocations;
- help children appreciate different types of people.

Some volunteers may not be able to work directly with children, but might contribute time and talent in other ways:
- repairing toys, books, playground equipment;
- making toys, games, equipment, curtains, pillows;
- collecting clothes for dress-up, costumes, dolls;
- collecting scraps and "throw-aways" - wood pieces, plastic bottles, cardboard, paper, fabric, yarn, boxes to use for making games, play props, or art materials;
- keeping a neighborly watch on the center after hours and on week-ends to prevent vandalism;
- caring for the playground - cutting grass, watering, pruning shrubs.

Volunteers find satisfaction in what they do. They feel needed, appreciated, respected, not taken for granted. They are asked to do interesting as well as routine jobs. In other words, their rewards are much the same as the paid staff.

Qualities of the Volunteer

- *vitality*
- *promptness, reliability*
- *ability to listen*
- *understanding of program's philosophy and policies*
- *affectionate*
- *appreciation for children*
- *emotional maturity*

7. Referral Services

County Extension Service

In all but a few counties in Texas there are Extension Services.

These services supply information, educational materials, and speakers on various subjects, including agriculture, horticulture, nutrition, home and family life. Services may help organize 4-H groups for boys and girls over age eight who are interested in projects such as bicycling, livestock, foods and nutrition, clothing.

Texas Parks and Wildlife Department
4200 Smith School Road, Austin 78744

This state agency has information regarding parks, fisheries, and wildlife. Pictures and educational literature are available and a 16-mm. film library is available for loans. Information on specific park facilities can be obtained by telephone or by visiting the facility.

Chamber of Commerce

This city office is a source of general information on the city and surrounding area, including types of business, industry, professional services, recreational facilities, educational facilities, and cultural opportunities.

Community Council

Located in most major cities, the Community Council can refer people to services available in the community.

Colleges, Universities, Public and Private Schools

People from subject areas often are available for information and help. Check about special exhibits, events, and productions that might interest children.

Parks and Recreation Office

This is a local office that administers and issues information on programs for children. Some offices require a fee; others are free. Check about instructions on swimming, arts and crafts, dancing, tumbling, and other sports.

Boy Scouts

Boys ages eight through 10 can participate in the Cub Scouts, boys 11 and over in Boy Scouts. Contact the Boy Scout Council nearest the community for help in organizing a troup.

Girl Scouts

A Brownie program is offered for girls in grades one to three. There also are scouting programs for older girls. Contact the nearest Girl Scout Council Office about starting a program.

Campfire Girls

Campfire Girls range from the first grade through high school. Contact local Campfire Council.

Public Library

A library is a good starting place for learning about a local community, where to go for help, and what's scheduled to take place.

8. Developing Community Pride

With adult encouragement, children can develop pride in their community during their school years. Such pride depends on the attitudes and examples in home, school, and day care center.

Consider with the children how the following members of the community affect the children:

- families;
- close neighbors;
- friends;
- teachers;
- church people;
- blue collar workers;
- people who work in libraries or museums;
- people who work at parks and other recreational facilities;
- doctors and dentists;
- policemen and policewomen.

Help the children learn responsibility for their possessions, materials used at the center, and community resources.

Be aware of the problems of getting rid of trash, and how much better an area looks after it's cleaned. Discuss recycling, and how it can be financially rewarding. Tin cans, aluminum, and newspapers may be collected and sold for re-use — a project that might be fun for older children.

As a group, pick up litter at the center, around the neighborhood, and at homes. Make a clean-up trip through a park. Find a storage bag or box for collecting flattened cans. (Remove ends of cans with a can opener. Then mash the cans flat and fold them.)

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DAY CARE
for School-agers

PS 010257

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Arts and Crafts

1. Overview

Arts and crafts are fun. Related activities are numerous. Printed material is easy to find, and ranges from easy introductions of arts and crafts in general, to in-depth studies of one activity.

Value of Arts and Crafts for School-agers

- Because it's fun, school-agers become enthusiastically involved and learn automatically.
- They learn skills useful later for pleasure or vocation.
- By receiving simple directions at the start rather than step by step instructions or patterns to copy, children have opportunity to be creative.
- Children enjoy working and sharing ideas with others. Often, creative ideas come from such interaction.
- They enjoy the satisfaction and achievement gained by creating something beautiful or functional.
- They discover special talents.
- Children feel good about making gifts for others. For example, a decorated flower pot is an inexpensive Mother's Day gift.
- Children like to preserve mementoes such as leaves and flowers.
- A craft may offer the chance to learn history. For example, macrame and decopage have ancient and interesting histories.

Introducing the Craft

- Learn about each new craft before doing it. Display examples. Encourage examination and discussion.
- Get children involved by letting them help collect needed items.
- Discuss any special history of the art. Sometimes the public library, department stores, and craft stores have displays.
- Don't introduce too much all at once.
- Have supplies ready. Probably the children can help.
- The whole group may be interested in some crafts, paper mache for instance. Other crafts may be interesting to only a few. Therefore, have several activities going on at the same time. Help one group start, then move to another group interested in something else.
- Another way to allow for different interests is to tape instructions for activities on the wall. Or, make a scrapbook with explanations where children can get ideas about what they're interested in. Label boxes of supplies.
- Some crafts are good time fillers, such as macrame or needlepoint. They can be done while waiting for another activity to start or while waiting for parents to arrive.
- Invite someone to the center to give a demonstration of a craft — how to do it and what a finished product looks like.

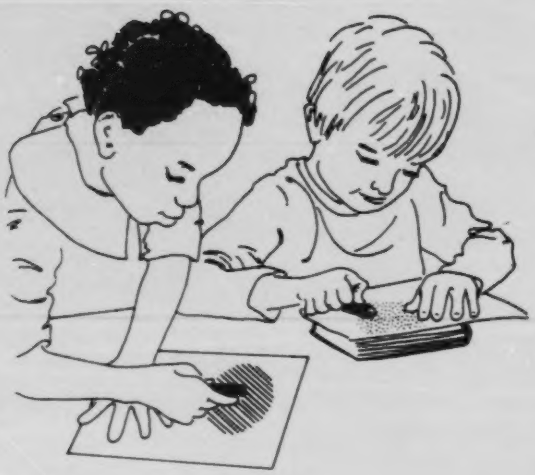
2. Basic Art Work

Crayons

Crayons and paper are useful for making designs, pictures, signs, and props for special activities.

Children need table space or floor space. Teach them to care for crayons and give them containers and a place for storage. Paste wax will remove crayon marks from metal, plastic, or wood. Protect table surfaces with newspapers.

Encourage the children to experiment with crayons: for instance, they can make bright, wide bands of color by using the sides of the crayons.



Rough Surfaces

Use crayons on rough surfaces. Show the children how to lay paper over a rough surface and rub the crayon over the paper so the texture of the surface appears on the paper. Help them find surfaces with interesting raised patterns.

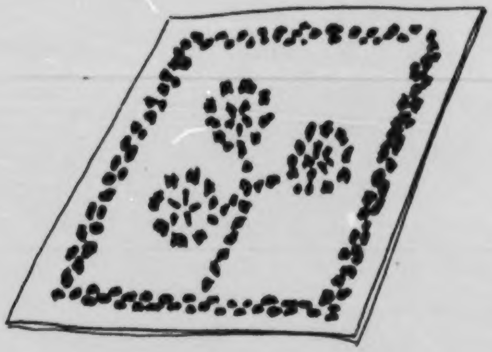
Coloring and Waxing Cloth

Anchor the cloth, perhaps by stapling it to cardboard. After the design is completed, place the cloth upside down between two sheets of plain paper protected by newspaper. With a warm iron, press on the paper that touches the back side of the cloth. Colors will melt and set on the cloth.

Crayon Mosaics

Let the children scrape the crayons with a table knife. Arrange the scrapings on a sheet of wax paper. Cover with another sheet of wax paper.

Place them between sheets of newspaper and press with a warm iron. Designs will be unusual and attractive. Hang them over a window pane so light will shine through the design.



Crayon Resistance

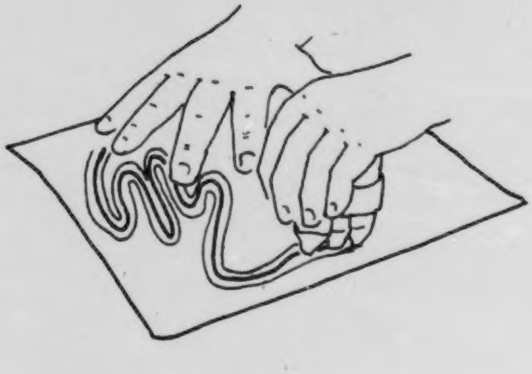
Crayon resistance is done by painting over designs made with jumbo crayons. The paint will not stick where the paraffin-crayon designs have been made.

Crayon Etches

Crayon etching is the opposite of crayon resistance. Cover the paper with heavy crayon markings in a variety of colors.

Next, cover the crayoned paper with dark colored poster paint which has had liquid or powdered soap added. (Soap helps the paint stick to the waxy surface.)

Let the paint dry. Then use a blunt object (popsicle stick or dull pencil) to scratch a design through the paint.

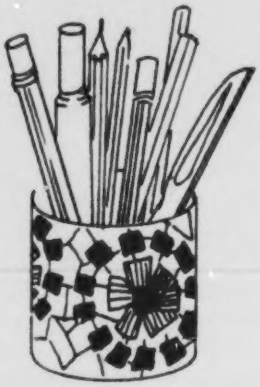


Crayon Bundles

Some colors are less popular than others. Tape three or four of these crayons together, and show the children how to make triple and quadruple tracks.

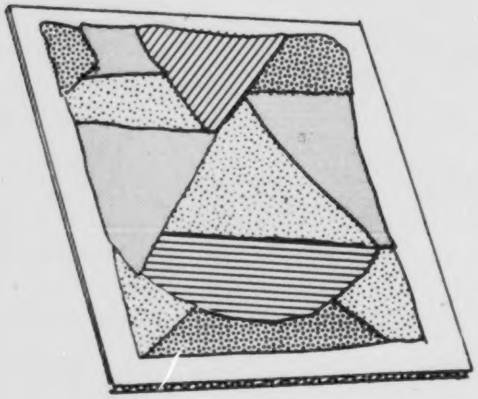
Collage

A collage is made by pasting pieces of paper or other materials onto a background. Use different textures, colors, and shapes.



Materials:

- for background: cardboard, grocery sacks, heavy paper (manila, construction, butcher), cardboard containers (frozen juice cans or boxes), tin cans with paper around them
- paste or liquid starch for paper and fabric, glue (diluted with water) for heavy things like shells
- pasting pieces, sorted so they may be found easily

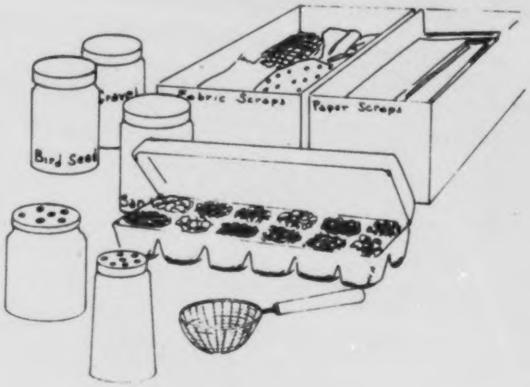


- paper scraps — construction paper, wallpaper, cellophane, decorative wrapping paper, magazine pictures
- textured products — corrugated paper, straws, foil, cotton, toothpicks, metal pieces, wood shavings, discarded scraps
- fabrics — varieties of textures, weight, and color (yarn, ribbon, etc.)
- natural objects — leaves, bark, berries, twigs, pebbles, shells

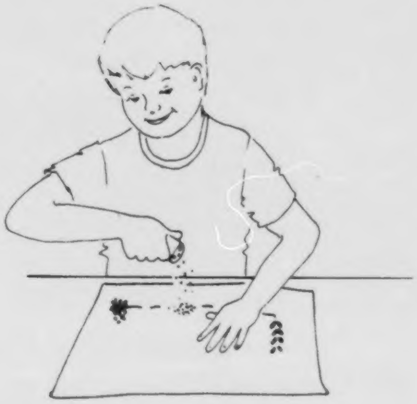
For variety:

1. Decorate with sand, tiny seeds, or crushed, dried leaves. Powdered tempra also can be mixed with most of these materials.
2. Apply glue to paper with small Q-tip or brush, in desired pattern. Shake or sprinkle material onto glue. Shake off excess.

- A cardboard base may be painted before applying pieces.
- Cover dimensional objects such as rocks, driftwood, molded clay, or boxes.



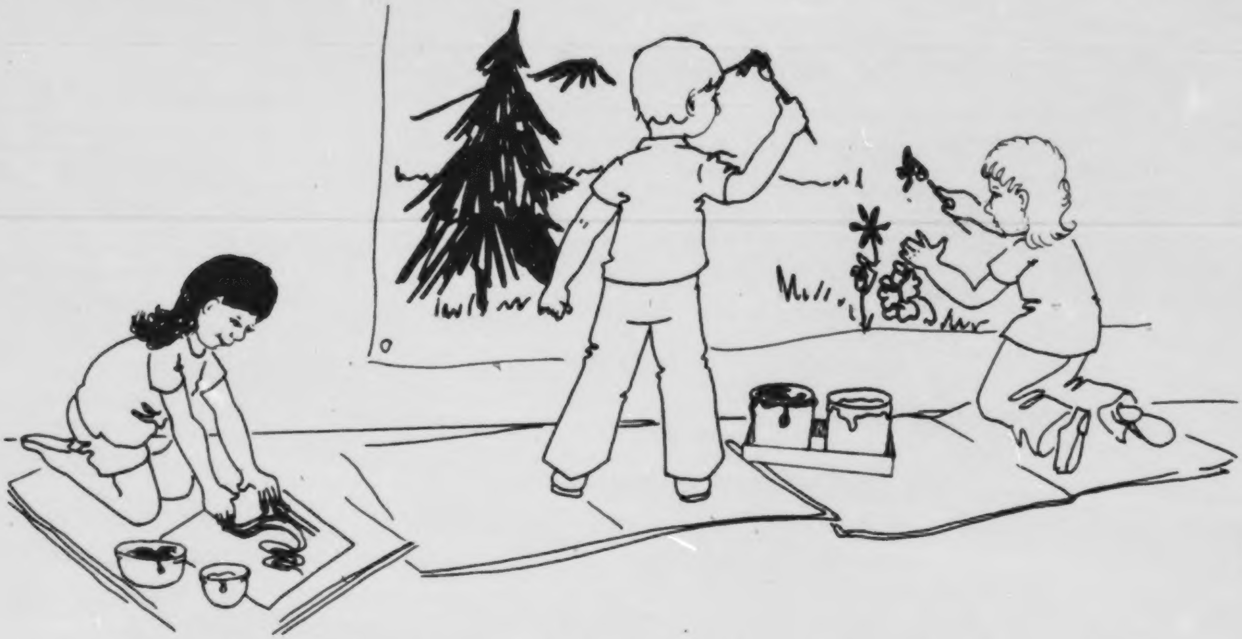
- For more permanent finish: apply thin coat of glue (thinned with equal amount of water) or shellac to finished product.



Tempra Paints

Tempra painting is easy and excellent for self expression. Children can explore and experiment with paints in a variety of ways:

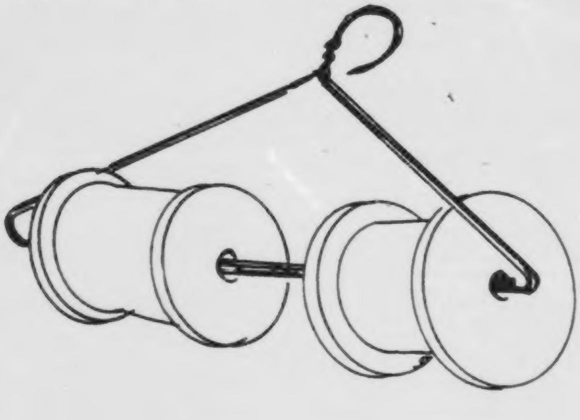
- Large space painting — Use several colors of tempra paint in cups with large brushes. Use on an easel, the floor, or paper clothespinned to a fence. Use large sections of newspaper, computer paper, on butcher paper. Children can paint whatever comes to mind, or experiment with mixing colors.



- Fingerpaint — This is a free activity. Children enjoy making a design and erasing it with one or two sweeps of the hand. It's also fun to add and blend colors.

Commercial finger paint and finger paint paper are expensive, so make them and save money. (See recipe section.) Paper should be glossy and non-absorbent, and at least 12 inches by 16 inches. Finger paint works best on wet paper. Wet the table with a sponge, then place paper down and smooth it with wet sponge.

- Spool paint — Cut a coat hanger and insert each end into the holes in spools. Squeeze coat hanger together to hold spools in place. Dip spools in paint, then roll them back and forth on paper.



- Roll-on paint — Apply thin paint with roll-on deodorant bottles.

Printing

Decorate paper for gift wrap and greeting cards, make murals and door coverings.

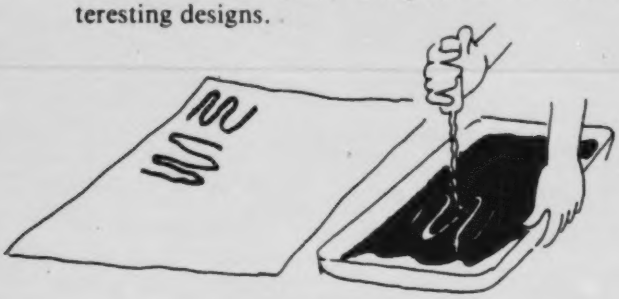
Things to print with:

- corncobs, cross section of stems, leaves, other naturally grown items
- wood scraps from a cabinet shop or lumber yard
- spools
- corrugated cardboard
- furniture coasters
- gadgets — forks, cookie cutters, bottle caps, potato mashers
- sponges cut in different shapes

Things to print on:

- opened-out paper bags, new paper, computer paper
- different weights and textures of paper such as tissue paper and cut down cardboard boxes
- placemats — paper and fabric

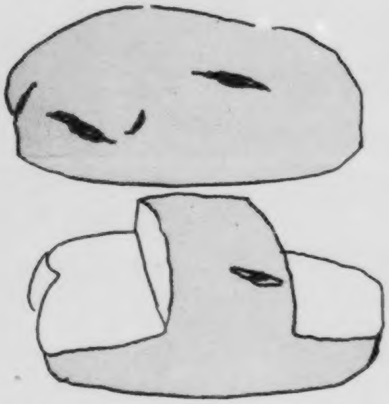
Put small amount of thin tempra paint in shallow container (styrofoam meat trays work great). Dip object in paint and stamp on paper. The children can think of objects that make interesting designs.



Potato Prints

To prepare the potatoes:

1. Choose firm potatoes. Cut across or lengthwise so edges are straight and will rest flat on surface to be printed.



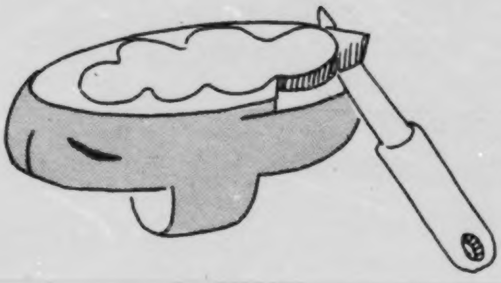
2. Trim top part slightly to form handle with which to grasp the potato easily.

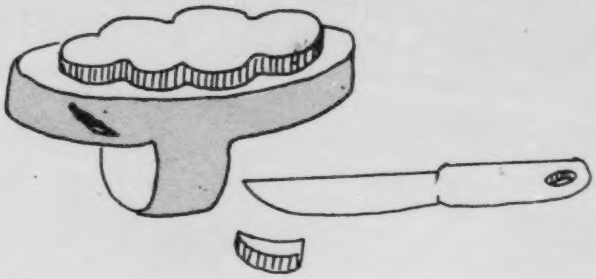
To make the design:

1. With a pencil, trace around a paper design on the cut surface of the potato.

2. Using a sharp paring knife, cut along pencil lines 1/4 inch deep.

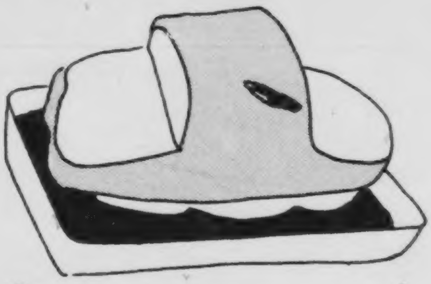
3. Carefully slice in from the outer edge of potato, cutting around design and removing excess potato so design is raised.

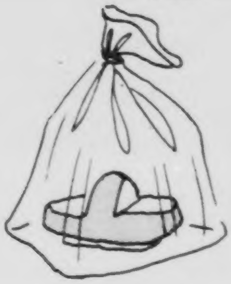




To make the paint pad:

1. Choose colors of fairly thick paint.
2. Pour small amount of color into shallow bowls with folded cloths or paper towels in them.
3. Sit potato printer in paint long enough to absorb paint.





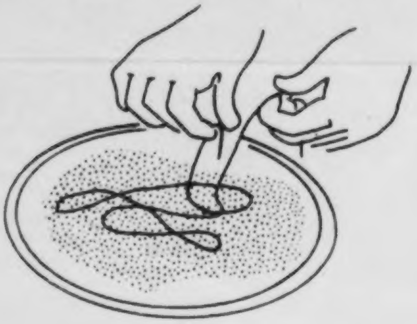
Store potato printer
in plastic bag
in refrigerator.

String Painting

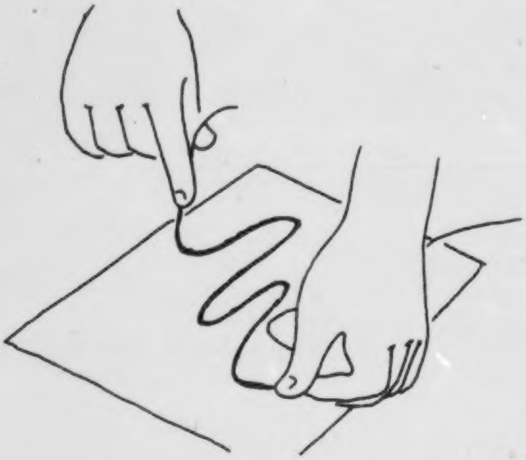
Materials:
- string
- paper
- paint or ink
- board, heavy cardboard, masonite, etc.
- brush or sponge

Directions:

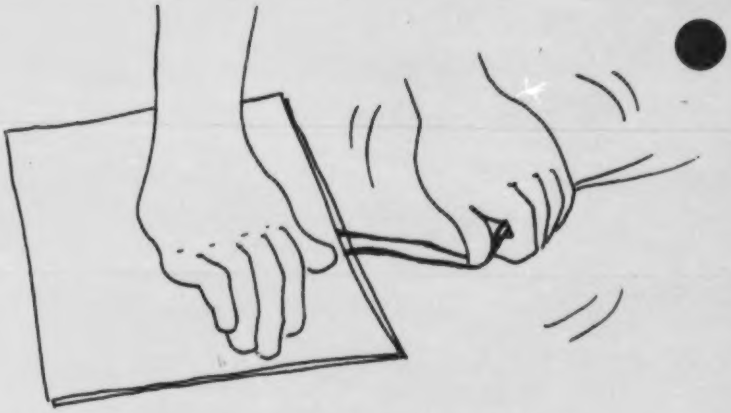
1. Place a sheet of paper on a flat surface.
2. Coat the string thoroughly with paint or ink. If tempera paint is used, be sure it is thin.



3. Arrange the paint-soaked string on the paper. Twisted loops make interesting designs. Allow the two ends to extend beyond the same edge of the paper.



4. Place another piece of paper over the first.
5. Cover the second paper with a firm piece of cardboard, wood, masonite, etc., and hold it lightly in place with one hand. With the other hand, grasp the two ends of the string and pull it from between the papers. The design will appear on both sheets of paper.



Variation 1: Use the string to paint with by swirling it across the paper.

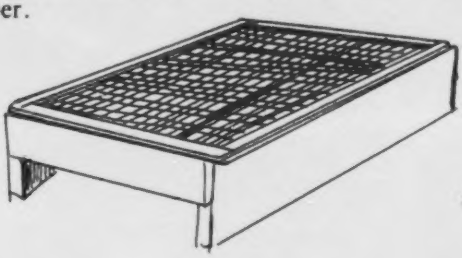
Variation 2: Instead of using two pieces of paper, fold one piece of paper in half. Place string that has been dipped in paint inside the folded paper. Press down with hands or heavy cardboard. Pull string out with a wiggling motion. There will be a mirror design. Use strings with different colors.

Spatter Paintings

Materials:
- ink or thin tempra paint
- old toothbrush
- shallow bowl (meat tray)
- pieces of screen
- paper

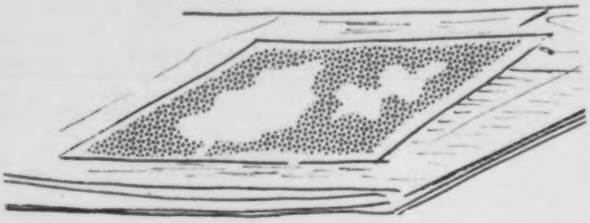
Directions:

1. Use light paint on dark paper and dark paint on light paper.
2. Flowers, leaves, buttons, scissors, and shapes cut out of construction paper, may be painted upon.
3. Make a screen frame with scraps of wood or molding from a building supply store.
4. Raise the screen about an inch off the paper.



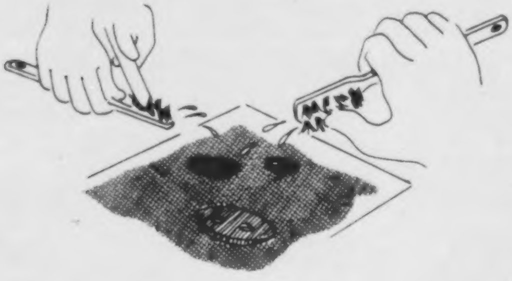
5. Make the screen safer by putting wood molding or cardboard around the top edge.

6. Use newspaper to catch splatters. Place leaf or flower on construction paper and set screen on top. Dip toothbrush in paint, then rub it over the screen.



7. When the leaf or pattern is lifted, a silhouette remains.

Another method of spatter painting is to rub heavy cardboard strip, ruler, or thumb across a toothbrush, as shown.



Chalk

Blackboards, chalk, and erasers are fun to use for tic-tac-toe, pictures, listing supplies, keeping scores, working problems, etc. Teach children to keep boards and erasers clean. Keep chalk in a handy place.

Chalk is also fun to use on paper. Try various methods:

- *Wet Paper and Chalk*

Materials:
pan of water, construction paper, chalk

Directions:
Dip paper in pan of water (or use a sponge to spread water on paper). Place flat on table. Use chalk for drawing. White chalk shows up best on dark paper, colored chalk best on light paper.

- *Buttermilk and Chalk*

Materials:
buttermilk, chalk, construction paper, sponge

Directions:
Sponge buttermilk over paper. Draw with chalk. The buttermilk prevents the chalk from coming off after it's dry.

3. Crafts from Other Cultures and the Past

Quilting and Patchwork

Quilting was born of necessity — people needed thick covers for warmth. So they learned that sewing fabrics around stuffing made warm bedding and clothing.

It is believed that the first quilting was in the Holy Land and brought to Europe by the crusaders. The extremely cold winters of the 14th Century in Western Europe sped up the making of quilted materials for warmth. During these years, quilting-frames were devised and special tools made for joining layers of fabric. With time, quilting stitches became more elaborate and decorative, especially in Southern Europe where quilting was done more for decoration than for warmth.

Quilting grew into a craft and prized creations were passed through generations.

Early quilts were not as colorful as today's — they were whole pieces of cloth sewn together with intricate stitch designs. Settlers in America had to reuse worn quilts and reline them with scraps of old clothing, giving them the appearance of patchwork. This was the beginning of the patchwork patterns of the 1700's and 1800's.

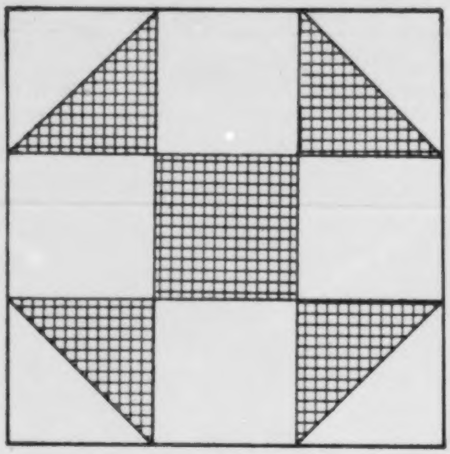
Quiltmaking continued to be a common activity until the arrival of machine-made goods.

In the 1960's, quiltmaking and patchwork were revived as a unique handcraft.

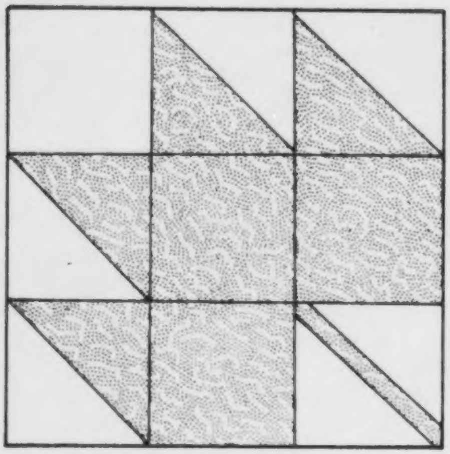
Making Patchwork Designs

School-agers may enjoy following traditional patchwork designs as much as creating new ones. It will help if there's an experienced adult to help and encourage.

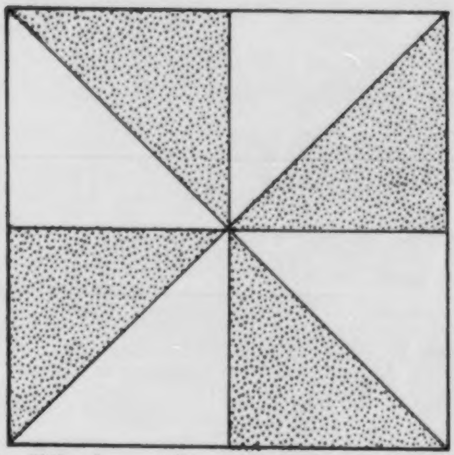
Here are four simple designs. Patterns needed for these designs are on the next page.



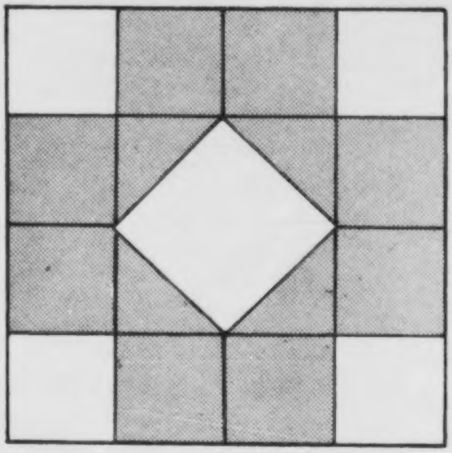
Shoo Fly — Simple to cut and piece. The pattern makes a 9-inch square. (Cut 1 print and 4 solid colors using pattern A. Cut 4 prints and 4 solid colors using pattern D.)



Maple Leaf — Squares and triangles with the stem appliqued on. Use green or bright fall colors for the leaf. The pattern makes a 9-inch square. (Cut 3 prints and 2 solid colors using pattern A. Cut 4 prints and 4 solid colors using pattern D.)



Pin Wheel — Also called "flutter wheel." Old pattern and easy to make. Pattern makes a 9-inch square. (Cut 4 prints and 4 solid colors using pattern E.)



Susannah — Dates back to when pioneers were crossing the plains in wagon trains, singing, "Oh, Susannah." Pattern makes a 10½-inch square. (Cut 1 solid color from pattern A. Cut 8 prints and 4 solid colors using pattern C. Cut 4 prints from pattern B.)

If piecing is too difficult for the children, suggest that they glue or stitch pieces directly onto a square piece of cloth — onto muslin or non-woven interfacing, for instance.

Have the school-agers put together a design cut from paper before working with fabric. After they've pieced a square, they may decide to sew enough squares for a small quilt, apron, or purse. Or they might try another design.

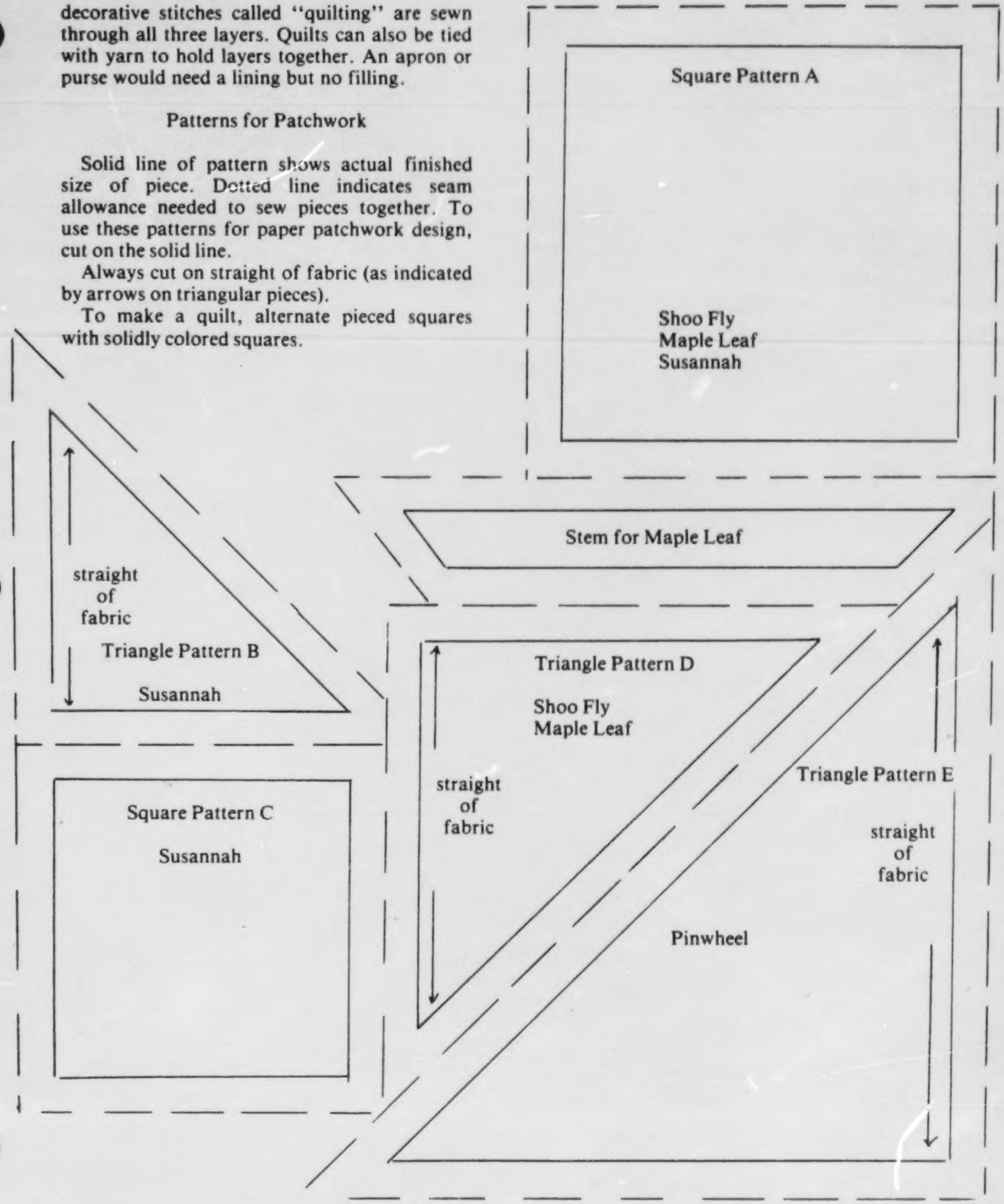
Quilts usually have a patchwork side and a solid side with a layer of cotton or wool in between. To hold the filling in place, small decorative stitches called "quilting" are sewn through all three layers. Quilts can also be tied with yarn to hold layers together. An apron or purse would need a lining but no filling.

Patterns for Patchwork

Solid line of pattern shows actual finished size of piece. Dotted line indicates seam allowance needed to sew pieces together. To use these patterns for paper patchwork design, cut on the solid line.

Always cut on straight of fabric (as indicated by arrows on triangular pieces).

To make a quilt, alternate pieced squares with solidly colored squares.

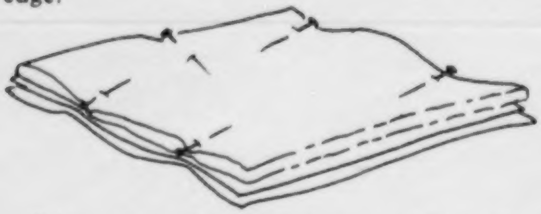

Square Pattern A
Shoo Fly
Maple Leaf
Susannah
Stem for Maple Leaf
straight of fabric
Triangle Pattern B
Susannah
Triangle Pattern D
Shoo Fly
Maple Leaf
straight of fabric
Triangle Pattern E
straight of fabric
Pinwheel
Square Pattern C
Susannah

Making a Quilt

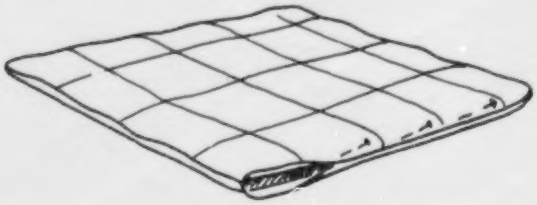
Decide on the size wanted and choose a pattern. Cut out patchwork pieces and assemble squares. Sew squares together in strips, alternating plain and patchwork squares. Then sew strips together and press.

Measure finished patchwork top and cut lining fabric and padding the same size.

On a large table, smoothly lay out patchwork top and lining (right sides together). Smooth the padding on top, match the edges, and pin all together around edges. Machine stitch around three sides 1/2 inch from the edge.



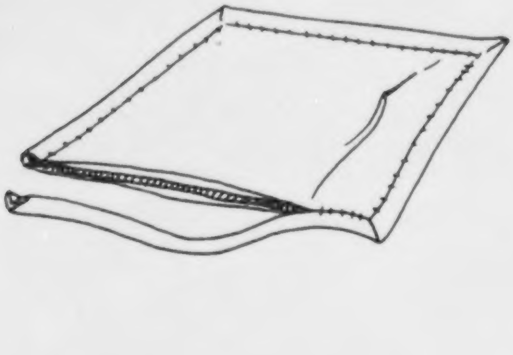
Trim seam allowance from padding. Turn quilt right sides out and press.



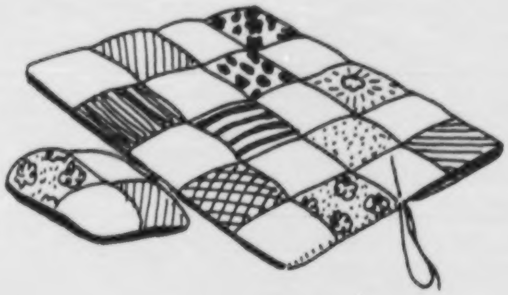
Fold lining seam allowance over batting along unfinished side. Turn under the top seam allowance with lining. Pin together along folds as shown.

OR

Assemble quilt with right sides out, with padding in the center and pinned. Bind edges with strip of bias fabric 1½ inches wide.



Patchwork Quilt or Pillow for Doll



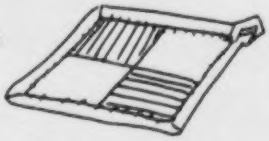
Make a patchwork quilt or unpadded coverlet for a doll bed. Square pieces of fabric are the simplest to put together. The coverlet pictured is made of twenty 3-inch squares with 1/4-inch seam allowance added on all sides.

Follow directions given on the previous page for making a quilt.

Make pillow in the same manner from 4 squares but stuff it before open end is sewn shut by hand.

Patchwork Potholder or Pin Cushion

These make nice, useful gifts.



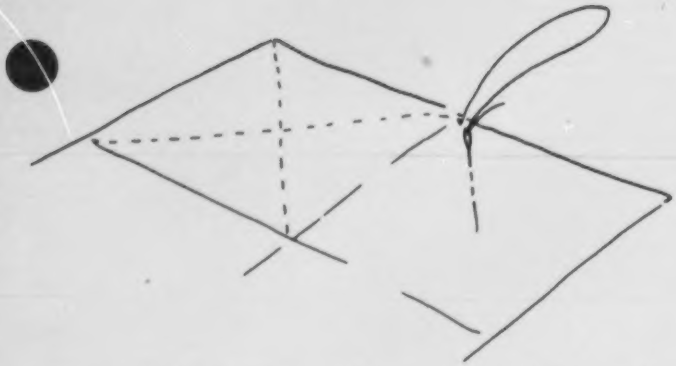
Materials:

- four 4-inch fabric squares
- a 7½-inch fabric square
- padding (7-inch squares of towel or ironing board pad)
- bias fabric strip 1 inch by 28 inches

Sew patchwork squares together and press. Assemble patchwork top, padding, and lining. Pin together, then bind edges with bias. Leave bias loop on one corner.

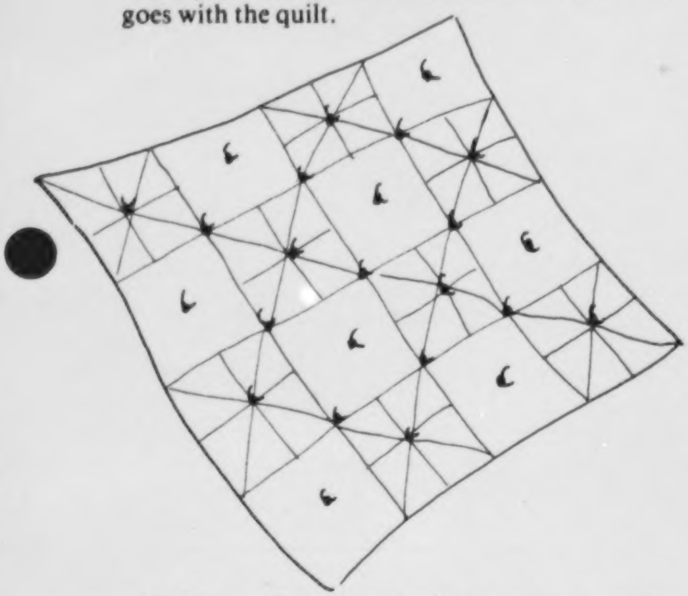
Quilting

Quilting stitches — hold padding in place between the quilt top and the lining. Sew with



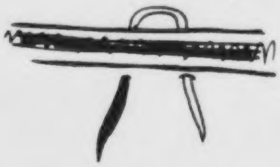
simple running stitches, as shown, criss-crossing patchwork pieces. Be sure stitches go through padding and lining.

Yarn tying is an easier method of holding quilt padding in place. Choose cotton or synthetic yarn that washes easily and a color that goes with the quilt.

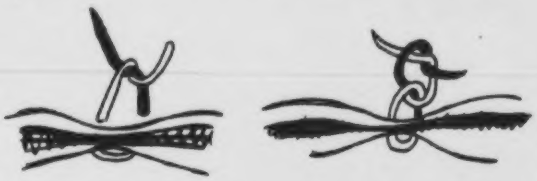


Decide where ties will look best in quilt design (usually at corner of patchwork pieces).

Thread a 24-inch length of yarn into a large, pointed needle. Insert needle from patchwork side of quilt through padding and lining. Pull through to lining side. Insert needle from lining side about 1/4 inch from first stitch. Pull yarn through until it is snug against lining, then cut yarn leaving a 2-inch strand to tie.



Tie in a square knot, as shown. Trim to even up ends.



Quilt padding made of cotton, synthetic fiber, or wool may be bought in most fabric departments. Cotton or wool padding will shift and become lumpy unless held in place by rows of quilting stitches.

Blankets or synthetic fibers will keep their shape and can be held in place with yarn ties.

Braiding

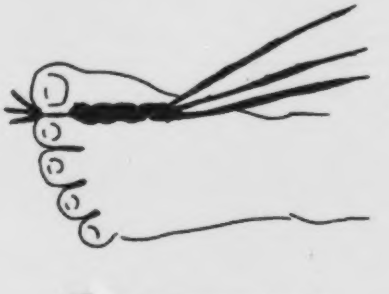
Braiding is a method of weaving strands of yarn, cord, etc. over and under other strands.

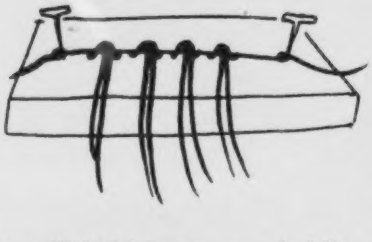
Materials:

- jute, cord, strings, yarn, ribbon, strips of cloth, raffia, leather strips, anything flexible enough to work with the fingers
- holding tool — it is important to hold one end tight while working a braid

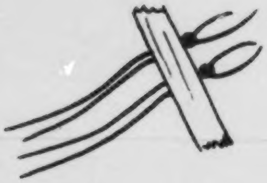
Holding Braid in Place

Toes will hold knots for 3- or 4-strand braiding.



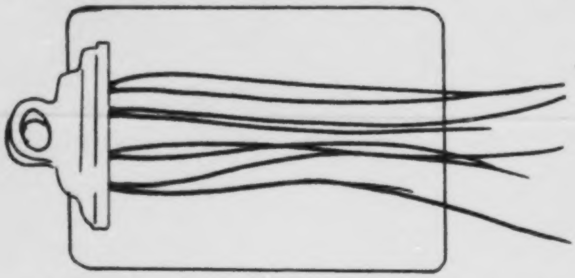


T-pins will hold knots or a holding cord on beaver board.

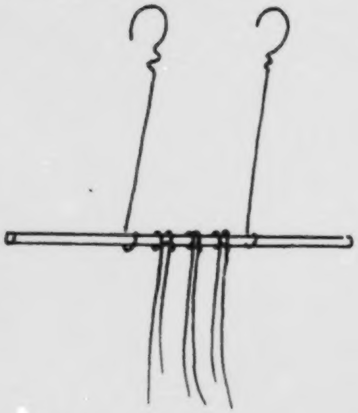


Masking tape will hold yarn on anything stationary, such as a table top.

A clipboard makes a good tool to hold knotted ends or a holding cord on a rod.

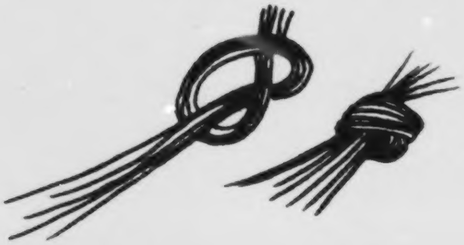


Two clothes hangers stretched out and bent up on end will hold a stick or rod.



To begin, fasten the ends in one of the ways shown below, depending on the width of the piece being braided and the decoration desired.

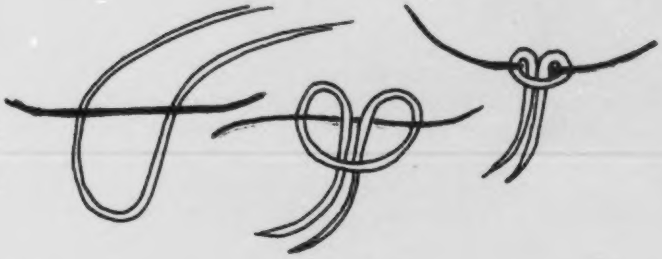
Overhand Knot



Tie 2, 3 or 4 strands by taking end around itself and bringing through loop. Pull tight.

Lark's Head Knot

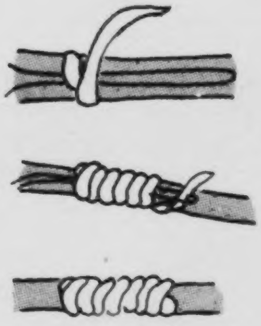
Double a strand, place the loop end over a holding rod or cord, pull loose ends through loop. Pull tight.



To finish, fasten ends together so braid won't unravel. (The overhand knot can be used as a finish when it's desired that both ends match.)

Wrapping Braid

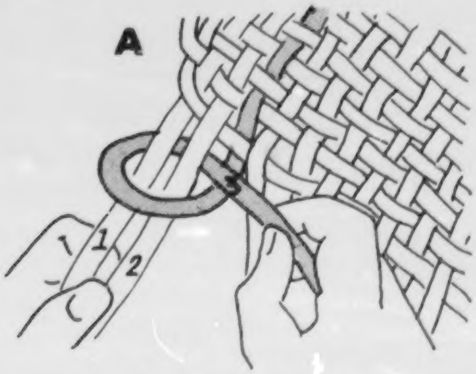
This is good for small braids. Place end of a piece of yarn on braid. Wrap yarn around braid, then pull end back through wrapping.



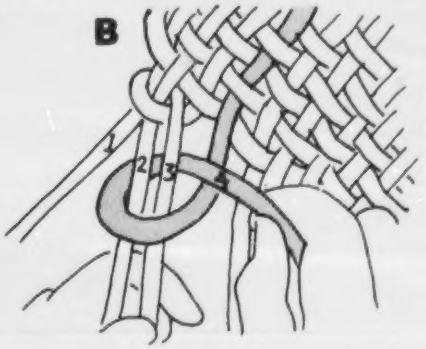
An easy way to do this is to loop a thread and lay it on the braid. Then wrap yarn over the braid and the thread. Put wrapping end through the loop of thread and pull out the loose end of thread, drawing the yarn end under the wrapping.

Philippine Edge

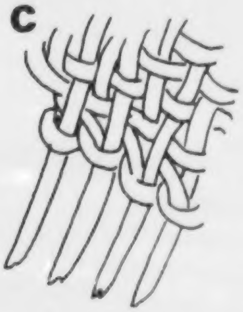
A Philippine edge makes a good finish on a wide braid.



(A) Starting on the left side, hold the 1st and 2nd strands, pick up 3rd strand and bring end out between the 2nd and 3rd strands, as shown. Pull tight.



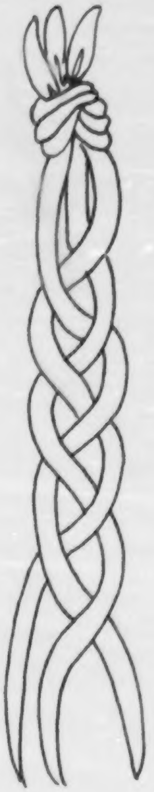
(B) Take 2nd and 3rd strands in left hand, pick up 4th in other hand and wrap around 2nd and 3rd, coming out between 3rd and 4th strand.

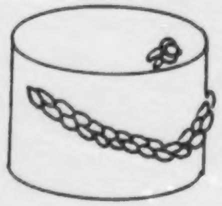


(C) Repeat procedure all across braid.

3-Strand Braid

1. Tie the three ends with an overhand knot.
2. Pull right strand over middle strand.
3. Pull left strand over middle strand.
4. Continue right over middle, left over middle to the end.
5. Tie other end with an overhand knot, and wrap or tie it with a bow.





3-Strand Bucket Handle

Use a plastic bleach bottle for a bucket. Cut a smooth edge and make 2 holes on opposite sides about 3/4 inch from top.

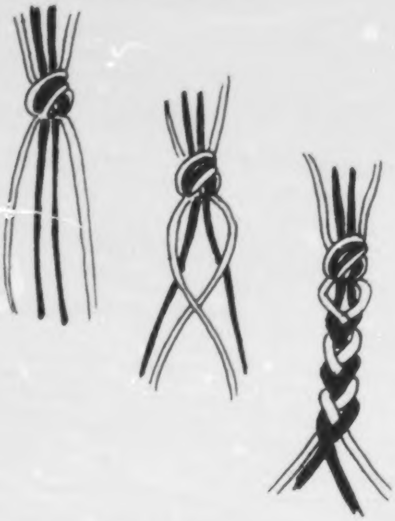
For the handle, cut the feet and tops from 3 discarded nylon stockings. Knot the ends together. Braid. Wrap braid with thread or tape, then attach to bucket through holes. Tie overhand knot in end of handle.

4-Strand Braid

Two colors make an interesting pattern.

1. Make an overhand knot at one end, with 2 strands of one color in the middle. Bring far right strand (light color) over middle dark strand.

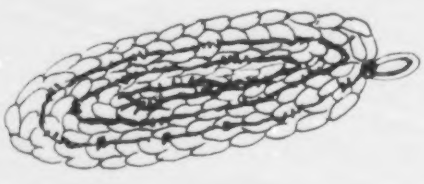
2. Bring far left strand (light) over the two middle strands (dark and light).



3. Continue far right over one middle strand, far left over two middle strands to the end. Wrap the braid or use an overhand knot.

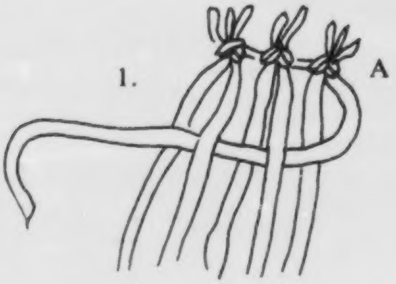
Potholder

With 3 strand braid, make coil from center. Stitch together with slip stitch.

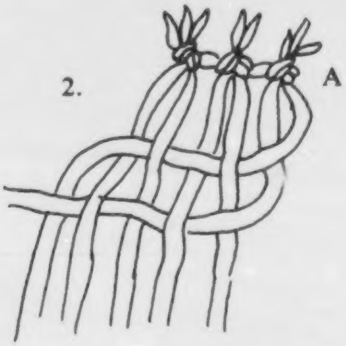


Peruvian Flat Braid

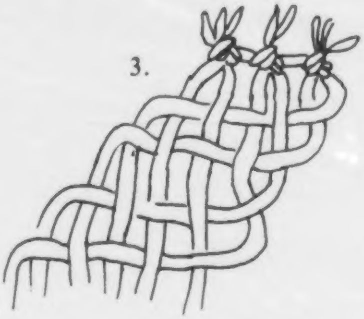
This is a simple braid with 4 or more strands. It can be tight or loose. Rows slant downward as worked. Each row is woven from right to left. Lefthanders can work from left to right.



1. Starting with the far right strand (A), weave towards the left by going over and under each of the other strands.



2. Weave the next-to-farthest right strand over and under the other strands including strand A which is now on the far left side.



3. Continue weaving each strand from right to left across the row of strands.

4. Finish edge with overhand knots on every 2 or 3 strands, work a Philippine edge, or take 3 or 4 strands and braid down, then make overhand knot and repeat with the next 3 or 4 strands.

Making a Belt

For an interesting belt, use the Peruvian flat braid, and jute, cord, heavy string, or rug yarn. The width will be determined by the number and thickness of the strands and the tightness of the weave.

Tie Belt

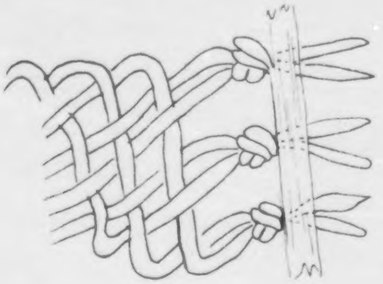
1. Decide on length:

- Measure around waist. = ______ inches
- Add 2½ to 3 inches for tying knot. = ______ inches
- Add 8 to 15 inches to hang down (allows 4 to 7½ inches on each side). = ______ inches

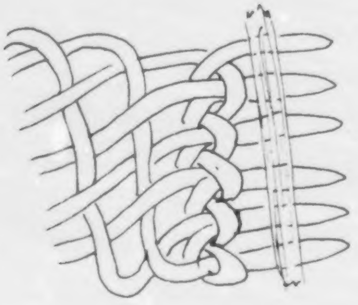
______ total inches

Cut each strand 1½ times the total number of inches above.

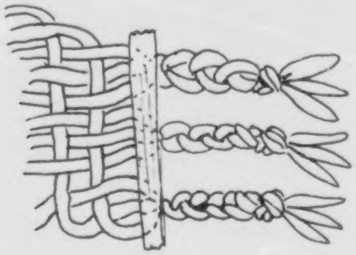
2. Choose a beginning and finishing technique from the 3 listed below:



* Tie every 2 or 3 strands together with overhand knot leaving 1 to 3 inches of fringe. Place knots in a row and secure with masking tape or metal clip. Braid from right to left. Finish at end with overhand knots and same amount of fringe.



* Work the Philippine edge from left to right after securing ends with masking tape or metal clip. Braid from right to left. Finish at end with same Philippine edge, leaving same amount of fringe.



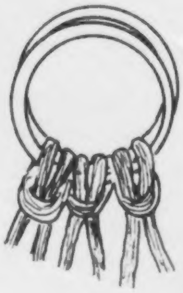
* Work a 3-strand braid after making an overhand knot. Repeat on another group of 3, making each braid the same length. Secure with masking tape or metal clip. Weave strands with Peruvian flat braid from right to left. Finish at end by braiding 3 strands and making overhand knot. Repeat with next 3 strands.

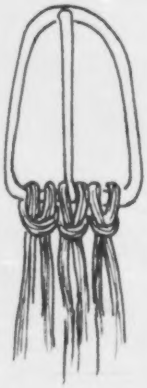
Buckle Belt

Use a discarded buckle or find 2 rings of same size.

1. Decide on length:

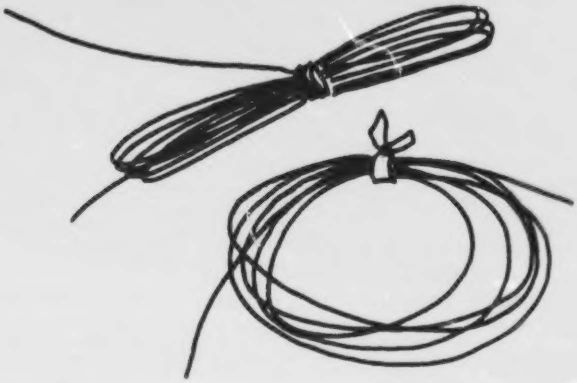
- Measure around waist. = ______ inches
- Add 4 to 6 inches for overlap. = ______ inches
- Since cord is to be doubled and mounted on buckle with lark's head knot, multiply by 3. = ______ inches
- For 10-strand belt, cut 5 strands. = ______ inches





2. Double the cord and mount on 2 rings or on a buckle with lark's head knots. Begin weaving the Peruvian flat braid from right to left.

3. Decide on finishing edge and knot securely. (Refer to suggestions for the regular belt.)



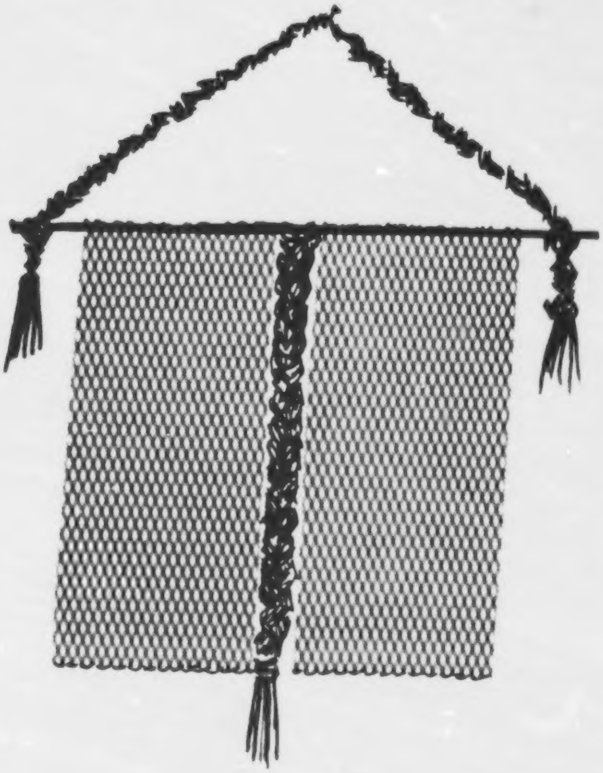
Note:
Long belt strands tend to tangle. Try winding up each cord and securing it with a rubber band or separate tie. Let out as much as needed.

Braided Wallhanging

To practice braiding from instructions on previous pages, make a wall hanging with colored yarns or cord. Find a stick 7 or 8 inches long on which to hang the yarn.

1. Cut 2 pieces of yarn, each 15 inches long, using 2 different colors. Mount together with a lark's head knot in center of stick. Work the 4-strand braid. The two middle strands should be the same color. Wrap the end with a 4-inch piece of yarn, leaving fringe on the end.
2. Cut 6 pieces of yarn, each 18 inches long, using all one color or 3 different colors. Mount on one side of the stick, close to center braid, with lark's head knots. Alternate colors. Then work the Peruvian flat braid. When there is about 2 inches left at the bottom, secure the ends with Philippine edge.
3. Repeat #2 on other end of stick next to center braid.

To make a cord with which to hang the stick, cut 3 pieces of yarn of one color. Tie an overhand knot at one end, leaving 1½ inches of fringe. Braid to the end, tie with an overhand knot, leaving 1½ inches of fringe. Tie one end of the cord to the stick so the small knot and fringe hang just below the stick. Repeat at other end of stick.



Macrame

Macrame is the art of knot tying. It dates back to early Egyptian culture where knots were used for decorative fringes and in fish nets.

Some knots had magical or religious meaning — for instance, the "Hercules" (square knot) which adorned Egyptian and Greek clothing and jewelry.

It is believed that knotting techniques were spread by sailors who spent leisure time creating knots to decorate ships, sell, trade, or give as gifts.

In Victorian times, macrame knots adorned the gowns of European women. Some craftsmen created beautiful and intricate bedspreads and wall hangings.

There has been a revival of macrame in the 20th century. Now it's enjoyed by people of all ages.

Materials:

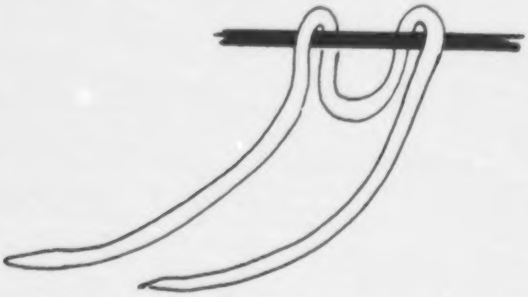
- string with which to practice knots: hemp, cotton string, jute, butcher's twine, drapery cord, unbleached string, or yarn (which requires care because it stretches and pulls apart easily)
- straight pins or "T" pins
- scissors
- ruler
- piece of corkboard, corrugated cardboard, styrofoam ceiling tile, or anything pins will stick to
- object for holding strings — sticks, dowels, another string
- beads, seeds, pieces of dried wood, other nature items to be worked into macrame

Things to Make:

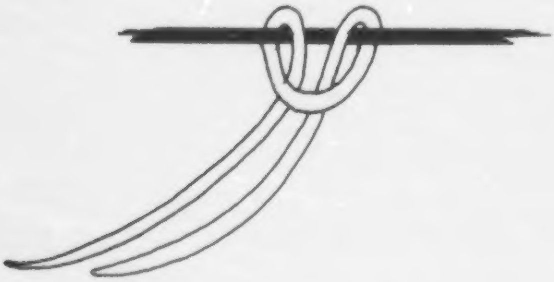
- necklaces
- bracelets
- headbands
- wallhangings
- hanging planters

Basic Macrame Knots

Lark's Head Knot



Used to attach strings to dowel on mounting board.

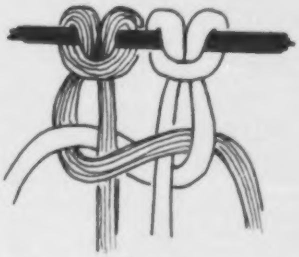


Fold string in half. Place fold over dowel.

Half Knot

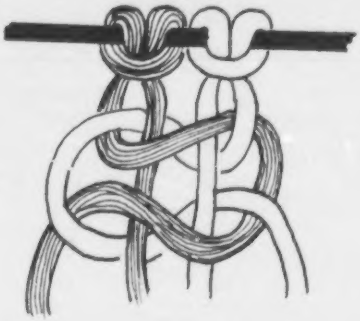
Bring left cord over 2 center cords, and under right cord. Then take right cord under the 2 center cords and through the loop made by left cord. Tighten.

A continuous row of these makes a spiral or twist.



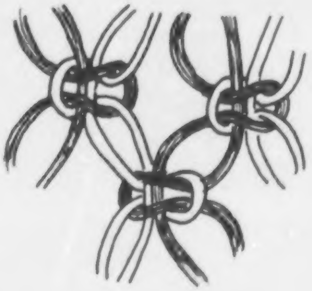
Square Knot

Do first step in half knot. Then with cord on left, go under filler cords and over right cord. Take right cord and go over filler cords and through loop on left. Tighten.



Alternating Square Knot

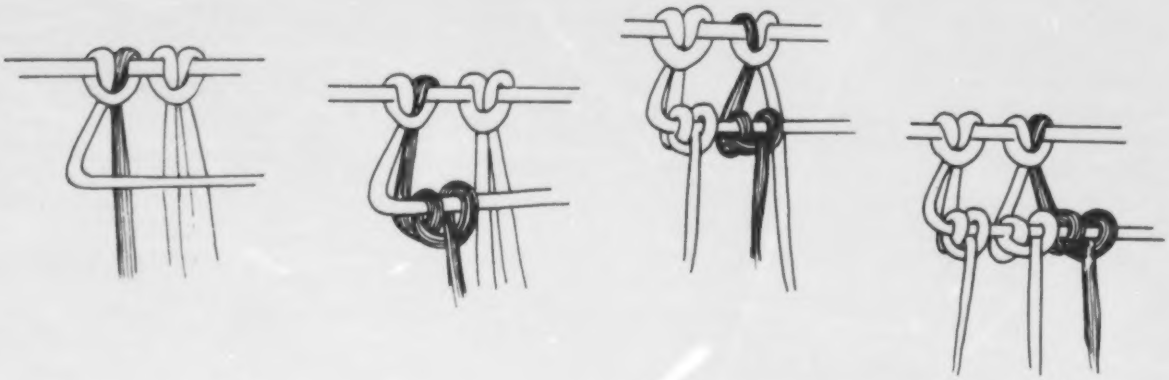
Use basic square knots on one row. Then use the two right hand cords of one square knot and the 2 left cords from the other for the square knot in the middle on the second row.



Double Half Hitch

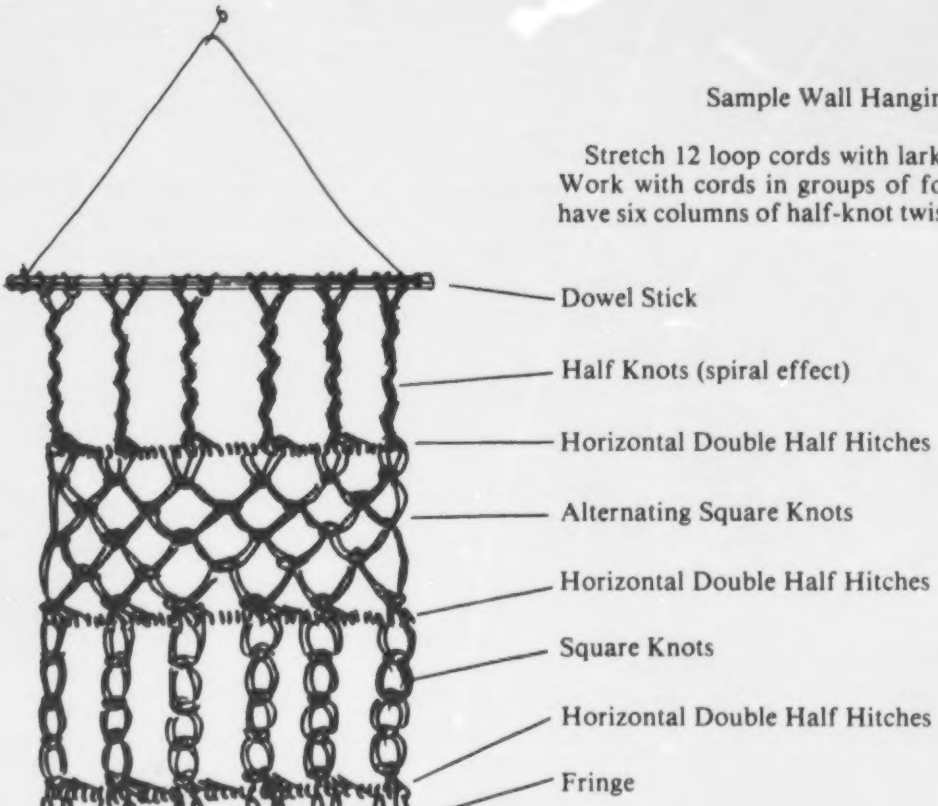
Anchor cord is on the left. Pin to hold in place. Place anchor cord over cord on right. Bring right cord under the anchor cord, over and through. Tighten. Repeat with same cord for a double half hitch. Tighten.

The knots illustrated here are from *Woodstock Kid's Crafts* by Jean Young Bobbs.



Sample Wall Hanging

Stretch 12 loop cords with lark's head knots. Work with cords in groups of four in order to have six columns of half-knot twists.

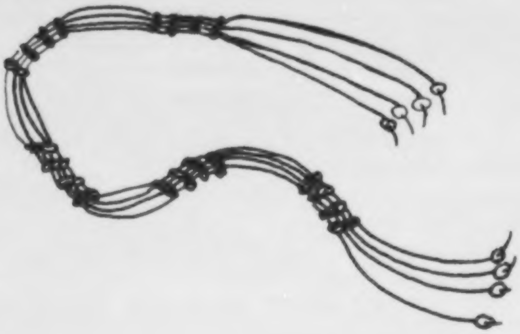

Dowel Stick
Half Knots (spiral effect)
Horizontal Double Half Hitches
Alternating Square Knots
Horizontal Double Half Hitches
Square Knots
Horizontal Double Half Hitches
Fringe

Repeat steps until the hanging is as long as desired. Use overhead knots to make fringe.

After learning basic macrame knots, refer to macrame books for more complicated patterns. Or, invent some new knots.

Simple Belt

1. Cut 4 cords, each 20 feet long.
2. Allow about 10 to 12 inches of fringe at each end of belt.



Tie 4 square knots over 2 filler cords, skip down three inches, repeat the 4 ties, skip down three inches. Repeat until belt is desired length.

3. Experiment with other knots and make an original belt.

A possibility is to tie small beads on the ends of the belt. Or tie single knots on each cord to prevent fraying.

Pet Leash

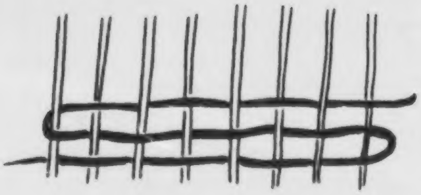
Make a leash for a pet with the continuous half knot twist for the length desired. Tie a ring to the end to hook on pet's collar.

Weaving

Children and adults enjoy weaving, one of the oldest known handicrafts. As early as the New Stone Age, people knew how to make a rough kind of clothing from the fibres of the flax plant. By 2000 B.C., they had figured how to cross threads to make beautiful patterns in material. During colonial days, much fabric was woven at home.

Woven items make decorative placemats, table runners, wall hangings, and clothing.

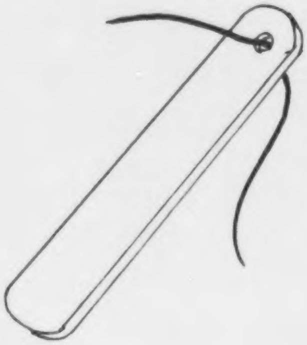
The weave consists of two sets of threads. One is the *weft* and is woven over and under the *warp*, which is stretched vertically on a loom. The loom is used to hold the warp tightly in place.



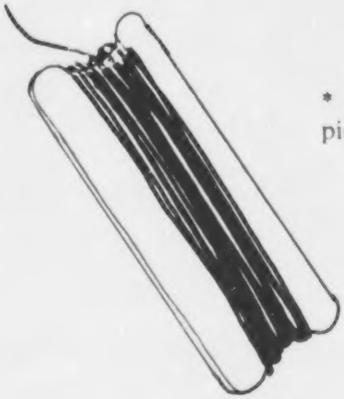
Warp thread: Use string or yarn that will not stretch or break easily.

Weft thread: Use anything flexible enough to weave in and out — knitting and rug yarn, strips of fabric or plastic, strings of beads, tree bark, feathers, leather strips, grasses, raffia, etc.

Shuttle: A shuttle holds the weft thread while it's worked through the warp. To make a shuttle, use a popsicle stick or tongue depresser and punch a hole in one end. Or, use a toothbrush handle by breaking the brush end off and filing down the rough edge. For long pieces of yarn, a flat stick or cardboard with grooves at each end works well. With small materials, use fingers or large-eyed blunt needle.



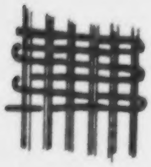
* popsicle stick, toothbrush, or tongue depressor



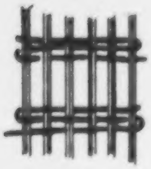
* cardboard or flat piece of wood

Directions:

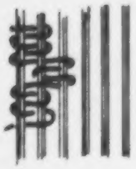
1. Begin at lower part of loom and weave weft thread *over* a warp thread, then *under* the next warp thread. Continue across the warp.
2. Work the next row by going *under* the warp threads that were gone over on the previous row. Be careful *not* to pull the weft thread tight as this will pull the warp threads out of line.
3. Each time the weft thread is woven across the warp, run fingers, pencil, or stick down the warp so as to push the weft up close to the last row of weft thread.
4. Vary weavings by:



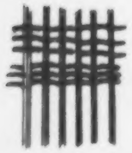
going over more than one warp thread;



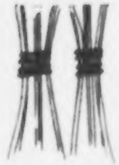
skipping some space along the warp before weaving another row of weft thread;



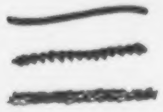
weaving one section of the warp, then another section;



weaving over the same warp thread on two or more rows;

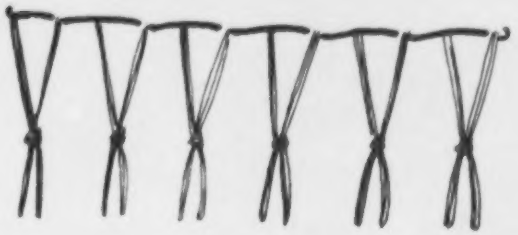


pulling some warp threads together with a wrap of the weft thread;



using different weights, textures, and types of weft materials.

5. To finish, cut the warp threads (or untie) from loom. To hold weavings in place, tie an overhand knot with each pair of warp threads.

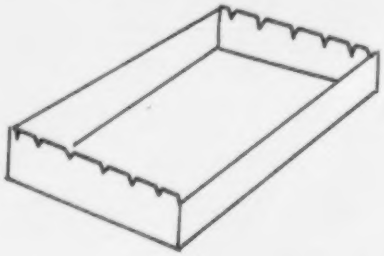


Looms

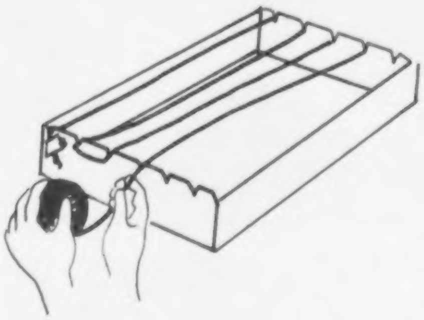
Simple looms can be made for beginning weavers. Sturdy looms of various sizes and complexities may be purchased or built and are desirable for weaving large items or complex patterns.

Box Top Loom

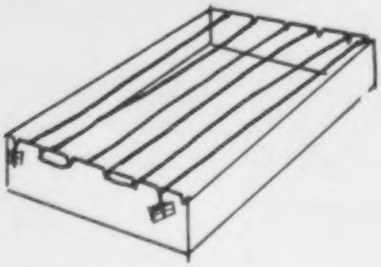
1. On the top of a cardboard box, cut slits equal distances apart on opposite ends.



2. Tie a knot in one end of warp thread and insert in first slot. Secure with tape if necessary. Lace thread from one end to the other so that the slits hold the warp in place. If it tends to slip, use masking tape across the end.

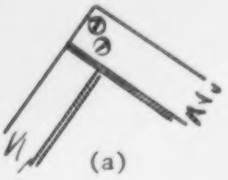


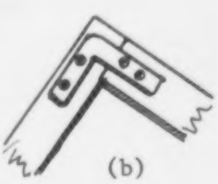
3. Tape the end of the warp thread.



Wood Frame Loom

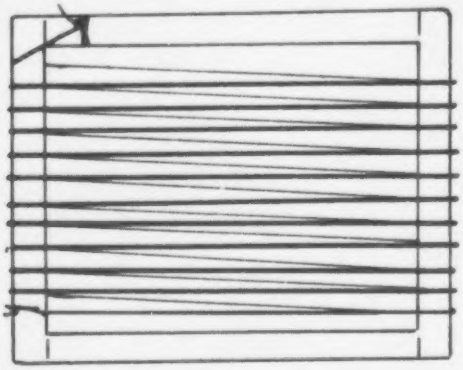
(a) Overlap corners and secure with 2 screws.


(a)


(b)

(b) Lay wood strips flat. Butt one end to another and secure with angle fastener and screws.

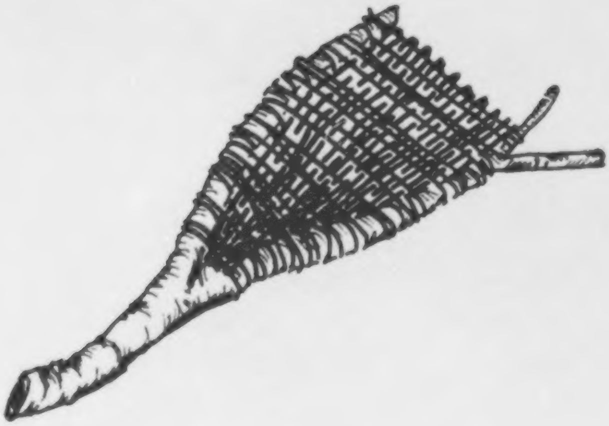
1. Use 4 strips of wood, 1 inch by 1 inch of whatever length desired. Make frame by joining ends with screws as illustrated in (a) and (b).



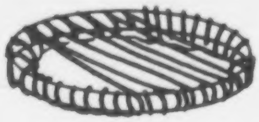
2. Tie an end of the warp thread onto one end of frame, then wrap around frame, spacing threads equal distances apart. Tie end of thread to side of frame. (c)

Other looms:

Devise an original loom by finding something sturdy enough to wrap the warp thread around. For beginners, find a loom that can remain a part of the weaving, such as a *forked tree limb.* For the warp, wrap string completely around limb each time so it won't slip. Then find materials to weave: rug yarn, a turkey feather, a strip of cedar bark, strips of colored cloth, plastic or rubber, etc.



Plastic lid from large coffee can:

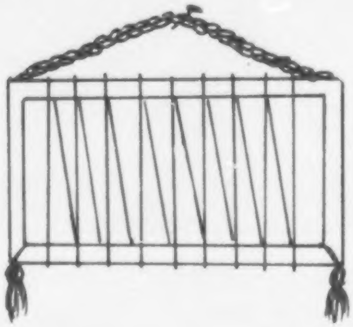


Cut out inside portion. Cut a notch in slick plastic to hold warp in place. Some plastic tops have ridges that will hold warp in place.

Weave paper ribbon, strips of print fabric, yarn, etc. Then wrap the plastic ring with yarn.

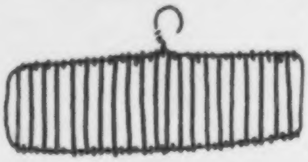
An old picture frame:

Make a braid for hanging. Hang tassels at corners.



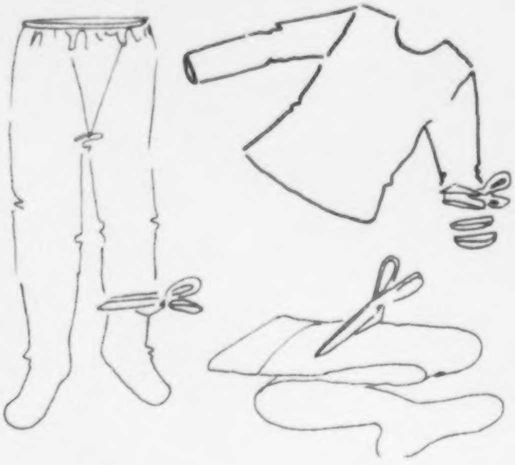
A coat hanger:

Bend to make a rectangular loom. Bend top hook in to make a ring for hanging.



Loop Weaving

Beginning weavers use knitted fabric loops and a loom made from a flat board and nails. Or, they may buy a plastic weaving frame, generally available in craft stores for less than a dollar and sturdy enough to use many times. Enough loops for 4 pot holders may be purchased for about $1.50.



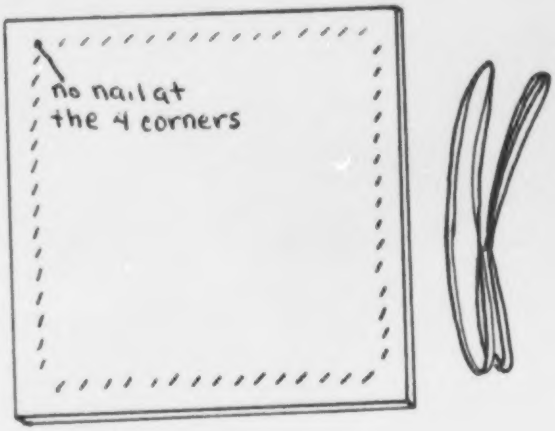
Loops

- Long sleeves from cotton knit shirts and cotton stockings make good loops for pot holders. Cut in strips 1 inch wide.
- Colored leotards, tights, and stockings make colorful table mats or pot plant mats. Cut in 1-inch strips, or wider if the material is light.
- Nylon stockings and panty hose cut in 2-inch strips make good loops to weave for dishcloths or bathtub cleaners. (Nylon cannot be used for hot pads because its fiber melts when heated.)

Note: Use the remainder of the nylon stockings for stuffing washable pillows. Save cotton knits to make strips for weaving and doll clothes, and for other sewing projects.

Loop Weaving Project I:

1. Use a plywood board which is at least 8-inches square.



2. Along the 4 sides, use a ruler and pencil to mark 20 dots 3/8 inch apart along a straight line.
3. Hammer a finishing nail at each marked dot except the 4 corner dots. Be sure nails are secure and stick out at least a half inch.

(Note: For a nylon stocking dishcloth or cleaning cloth, use an 8¼-inch square of nails (24 marks, 3/8 inch apart) on a board about 10 inches square.)

4. Stretch loops from top row to bottom row of nails all the way across.
5. Weave loops from one side to the other, over and under the stretched loops. Secure on nail at each side.
6. After the loops are woven, secure the edge. With a crochet hook (or fingers) pick up a loop which is on a nail at one of the corners. Then pick up 2nd loop and pull through the 1st loop, pick up 3rd loop and pull through 2nd loop, 4th through 3rd, etc.
7. The last loop pulled through is the hanging loop. To secure it, pull it through corner weave or tie around preceding loop. Or, loop may be woven into mat.

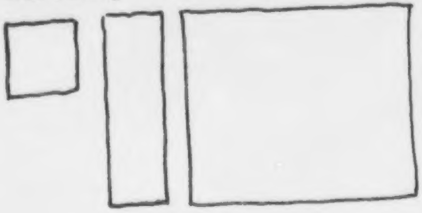
Loop Weaving Project II: Decorating Burlap by Weaving

Burlap bookmarkers, coasters, and mats are easy to make by decorating simple squares or rectangles with contrasting threads, burlap, or yarn.

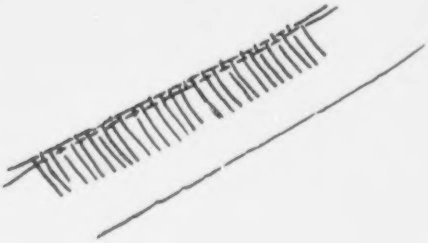
Equipment: scissors, chalk, ruler, blunt large-eyed needle

Materials: burlap fabric in a variety of colors, yarn

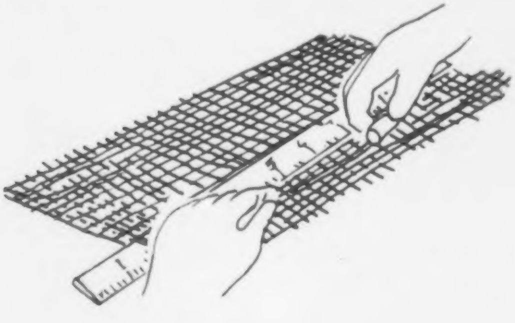
1. Cut burlap into desired size.



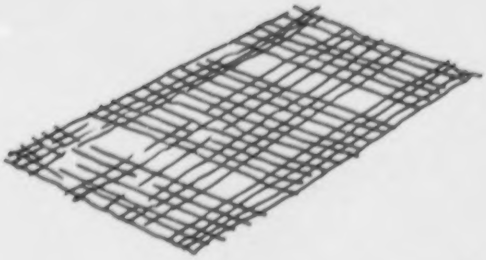
2. Unravel scraps or the end of contrastingly colored burlap. Be sure threads are long enough to complete design.



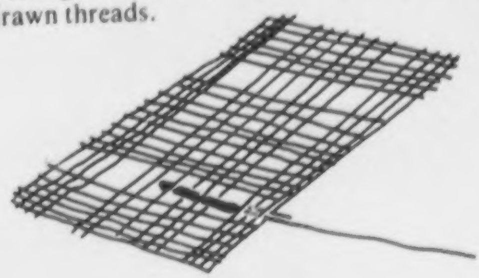
3. Decide on design. Measure and mark lightly with chalk on wrong side of the mat.



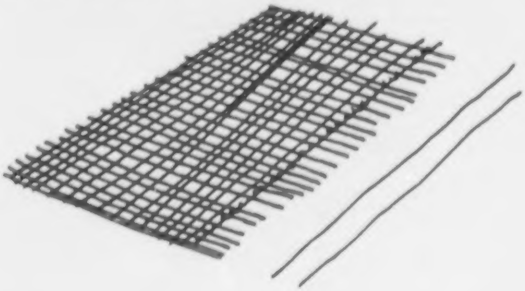
4. Carefully draw threads from mat, following design.



5. Use large, blunt needle and weave contrasting threads or yarn into spaces left by the drawn threads.



6. Fringe edges by pulling out first 4 threads on each side. To prevent raveling, zig-zag the new edges with matching thread.

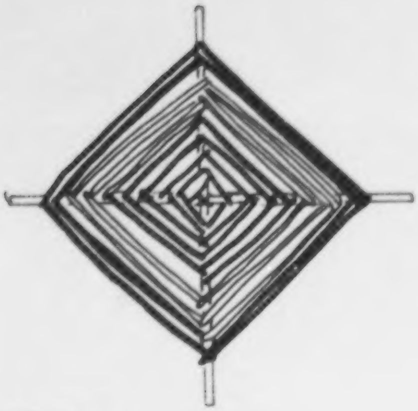


Ojo de Dios (God's Eyes)

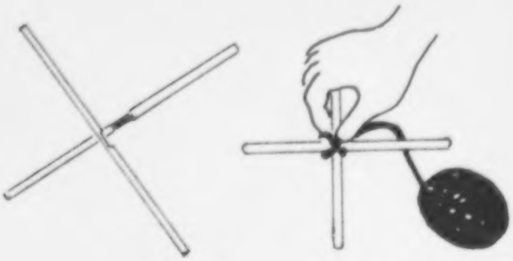
This kind of weaving was handed down by American Indians. Bright colored yarn is woven across a cross made with two sticks.

Materials:

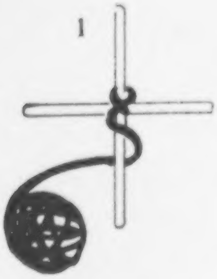
- 2 sticks of equal length (popsicle sticks, dowling, straight twigs 1/4 inch or more in diameter, stiff plastic straws or toothpicks)

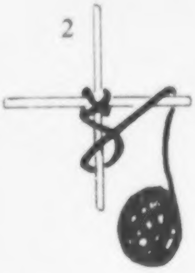


- white glue
- yarn in a variety of colors (heavy yarn with larger sticks, lightweight yarn with straws or toothpicks)

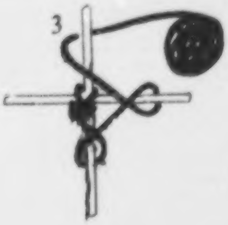


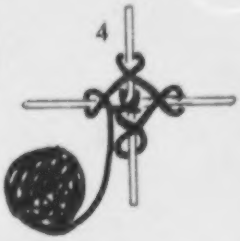
To assemble sticks: Do this the day before weaving. Measure and mark the center of each stick. Round sticks should be flattened slightly on one side at center (as shown). Apply glue to each stick at center and press together. Wrap joint tightly with strong thread and knot. Be sure sticks are perpendicular to each other. Set aside to dry.



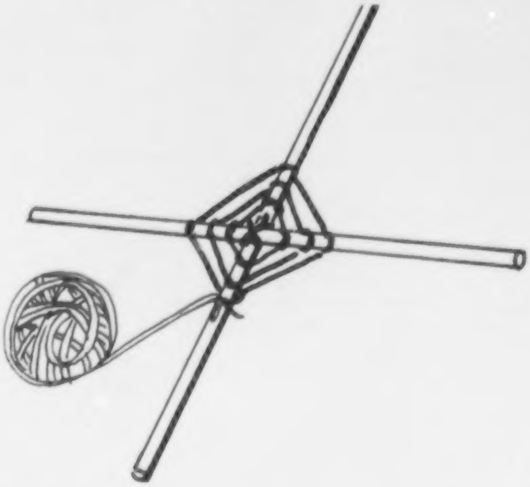


To weave: Hold end of yarn at center of cross, as shown, and loop yarn under and over center to hold yarn-end in place. Follow instructions 1 through 4, as shown, looping yarn around each leg of the cross. Push yarn loops firmly toward the center of the cross, keeping yarn tight so loops are even.

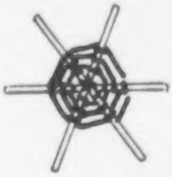


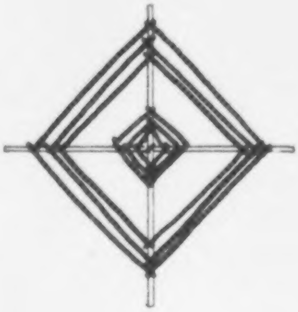


To change colors: cut yarn at back of stick. Tie on new color of yarn so knot will remain at back of stick. Then continue weaving.



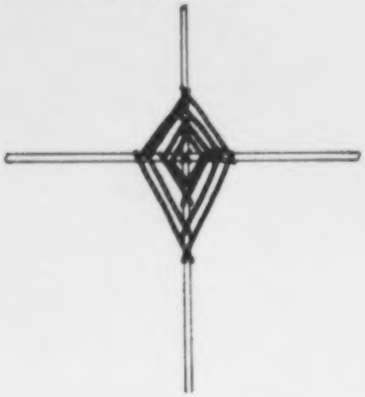
To finish: Knot yarn-end around last stick and tuck in end of yarn at back. Make a loop for hanging.





For variety:
- Change colors of yarn.
- Add more sticks.
- Skip space between wrappings.

- Change design to diamond or kite shape by using one long stick and wrapping farther down its arm each time around.

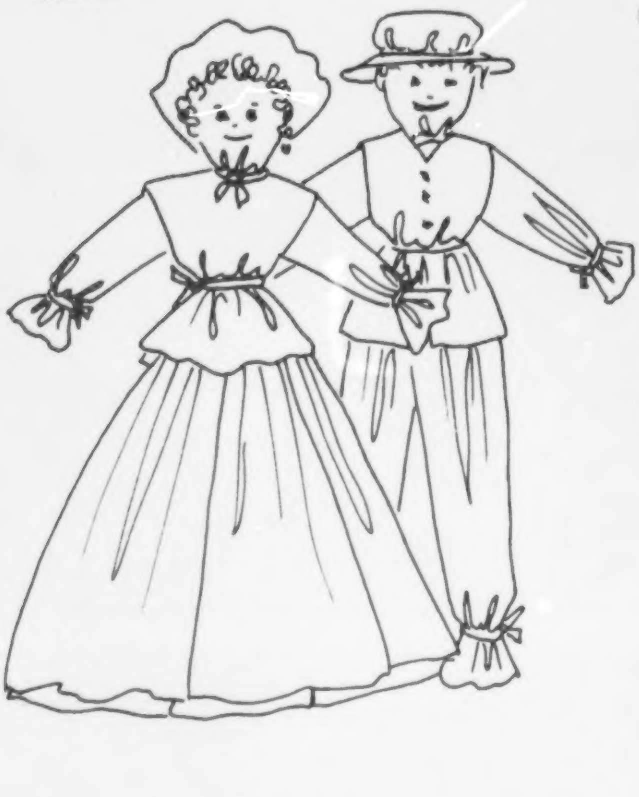


- Add depth or shadow effect by turning sticks over and wrapping on the other side. Then turn sticks back over and continue wrapping from the first side.

Homemade Dolls

Corn Husk Dolls

Cornhusk dolls were made during colonial times and frontier days, and still have a special charm.

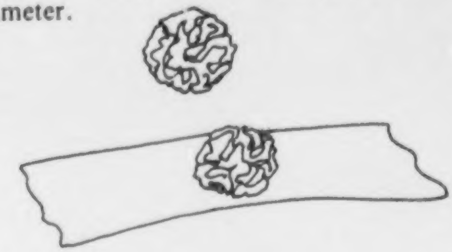


Materials:
- dry cornhusks
- dry corn silk
- string
- straight pins
- glue
- pipe cleaners

Make the basic doll from naturally colored husks, soaked in warm water for 5 to 10 minutes to make them bend.

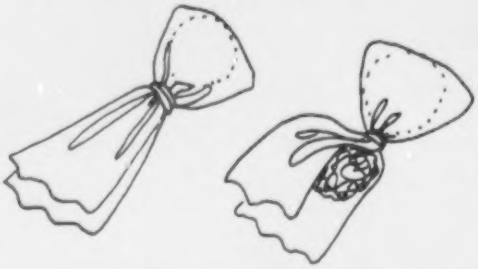
Directions:

1. Tear a piece of wet cornhusk into narrow strips. Roll strips into a ball about an inch in diameter.



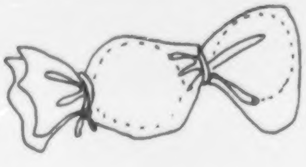
2. Place ball in the center of an oblong piece of cornhusk about 1½ inches wide and 8 inches long.

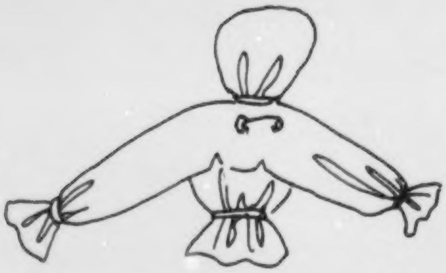
3. Fold husk around ball and tie firmly with string to form doll's head and neck.



4. Make a second ball of narrow strips, slightly larger than the first. Place it firmly against neck. Pull ends of husk around this torso padding.

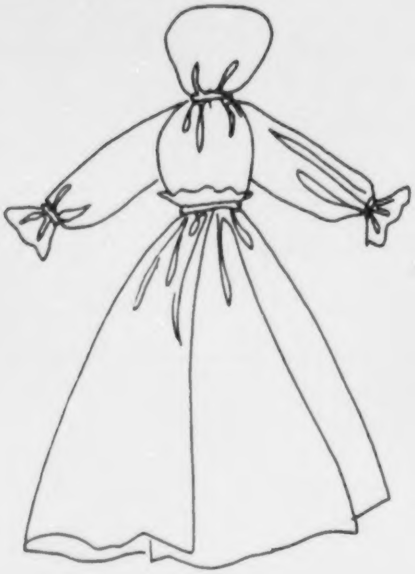
5. Tie a second time to form doll's waist.



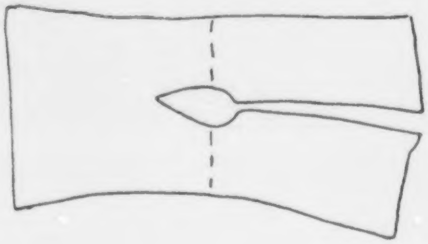


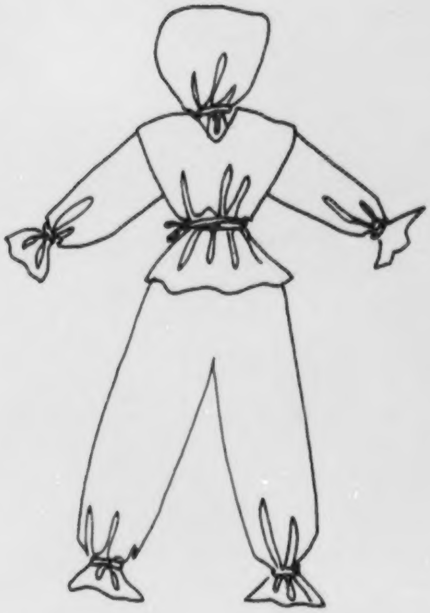
6. To make the arms, roll a 5½-inch length of curved pipe cleaner in an oblong piece of cornhusk. Tie with string to form wrists, and pin at center behind the doll's shoulders.

7. For a full skirt, gather one end of several wide pieces of cornhusk about 6 inches long. Tie over doll's waist, as shown. (Make pants by slitting the skirt's center at front and back and tying at ankles.)

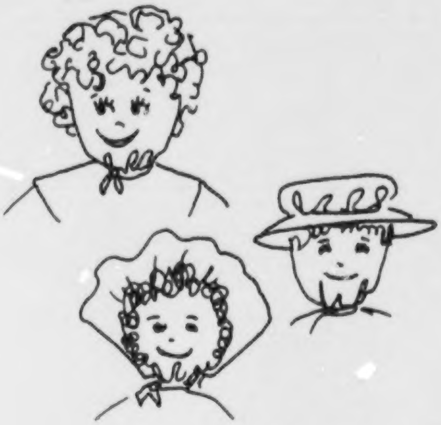


8. Make a jacket as shown below. Tie it at the waist with a narrow strip of cornhusk.





9. For hair, glue on a small wad of dried corn silk.



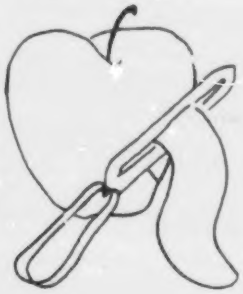
10. For a bonnet, tie a small gathered piece of cornhusk around the neck. Or, cut a round brim with hole cut for head.

These are basic directions for a 9-inch doll. Size and costume can vary. Use food coloring to tint the cornhusks used for doll's clothing. Dilute coloring with water and pour it into shallow bowls. Soak husks to achieve shade desired. Blot dry.

Apple Head Dolls

For over 500 years, people have made dolls with dried apple heads and dressed them with scraps of cloth.

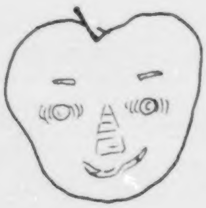
Materials:
- medium size apple with stem
- paring knife
- lacquer
- lightweight coathanger or similar-weight wire that can be bent
- fake fur or cotton balls
- fabric pieces
- masking tape
- newspapers
- paint and string



Directions:

1. Peel a medium size apple. Don't remove the stem.

2. Carve eyes and mouth and a wedge-shaped hole for the nose. Dip head in lemon juice to prevent discoloration.

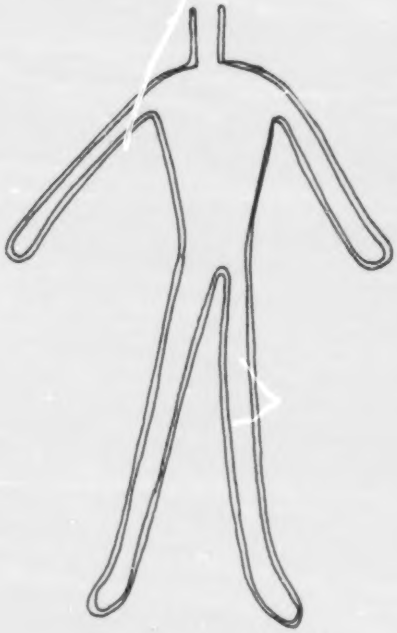


3. Tie string to stem and hang apple to dry for 2-3 weeks.

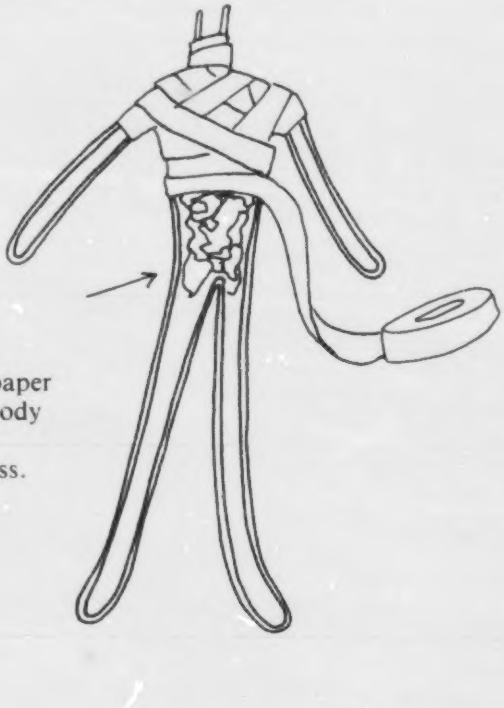
4. Spray the apple with lacquer and allow to dry.

5. Dab on paint where eye and mouth have been carved.

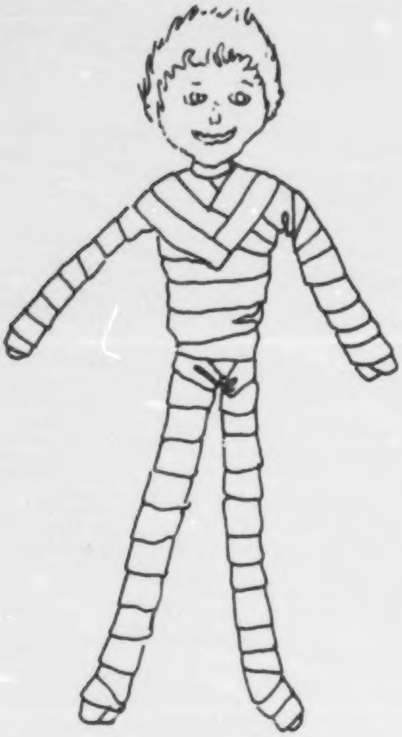
6. Form body by bending the wire as shown.



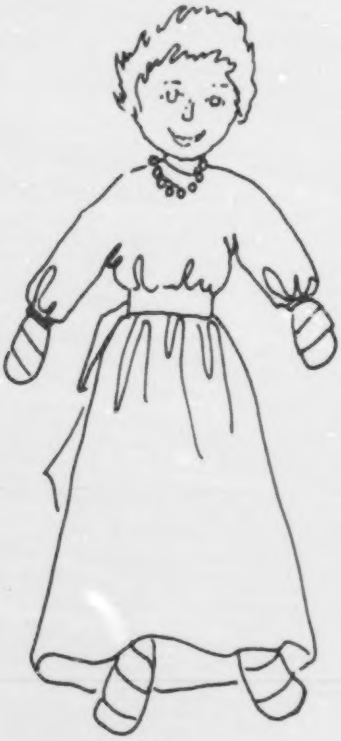
7. Wrap masking tape around the body. Begin at the neck, leaving enough wire to stick into the apple.

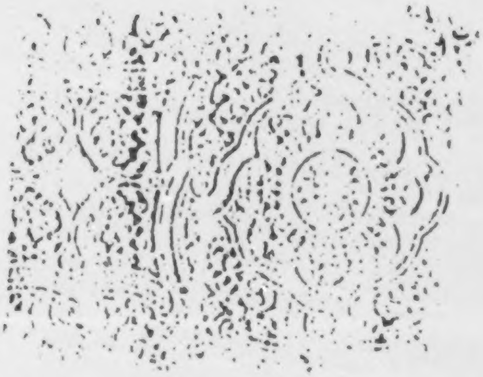


Stuff newspaper into body for fullness.



8. Stick head on wire neck.
9. Make clothes out of scraps of fabric.



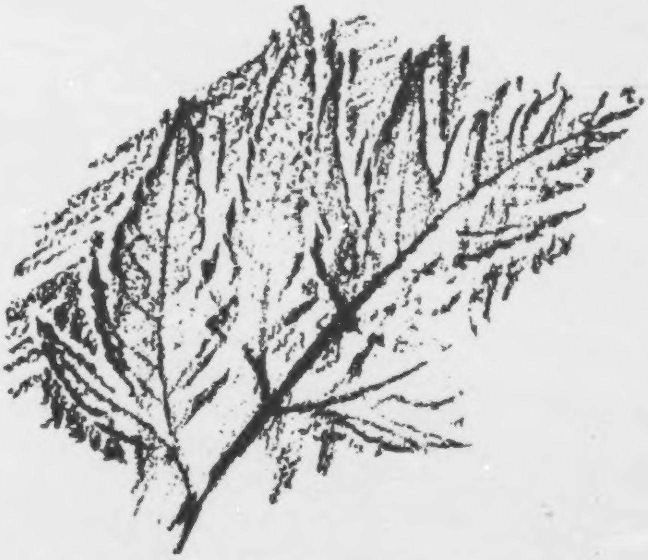


Rubbings

A rubbing is an image of a raised or textured surface made by placing paper over it and rubbing the paper with a colored substance.

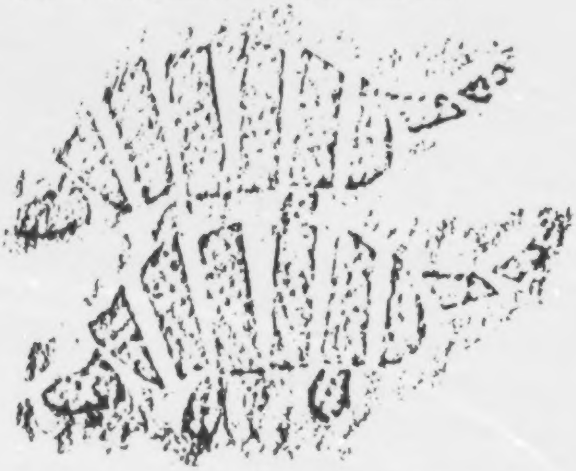
Historians use the art of rubbing to reproduce carvings related to the past. Children can use the same technique.

Many types of surfaces lend themselves to rubbings: gravestones, building cornerstones, manhole covers, signs, fencing, walls, pavement, toys, coins, and the flat parts of embossed machines or tools.



Also, nature is a great storehouse for material for rubbings. Leaves, flowers, bones, stones, bark, and seed pods make surprising patterns. Part of the fun is searching for the surface to rub.

In "Creative Rubbing," instead of reproducing patterns or pictures, the children can *make* them by gluing paper cutouts to a flat paper backing. Then they can make a rubbing of the picture, repeating the design if desired.



Be careful not to get glue or paste on the backing. Be sure the glue is dry before making the rubbing.

Materials:

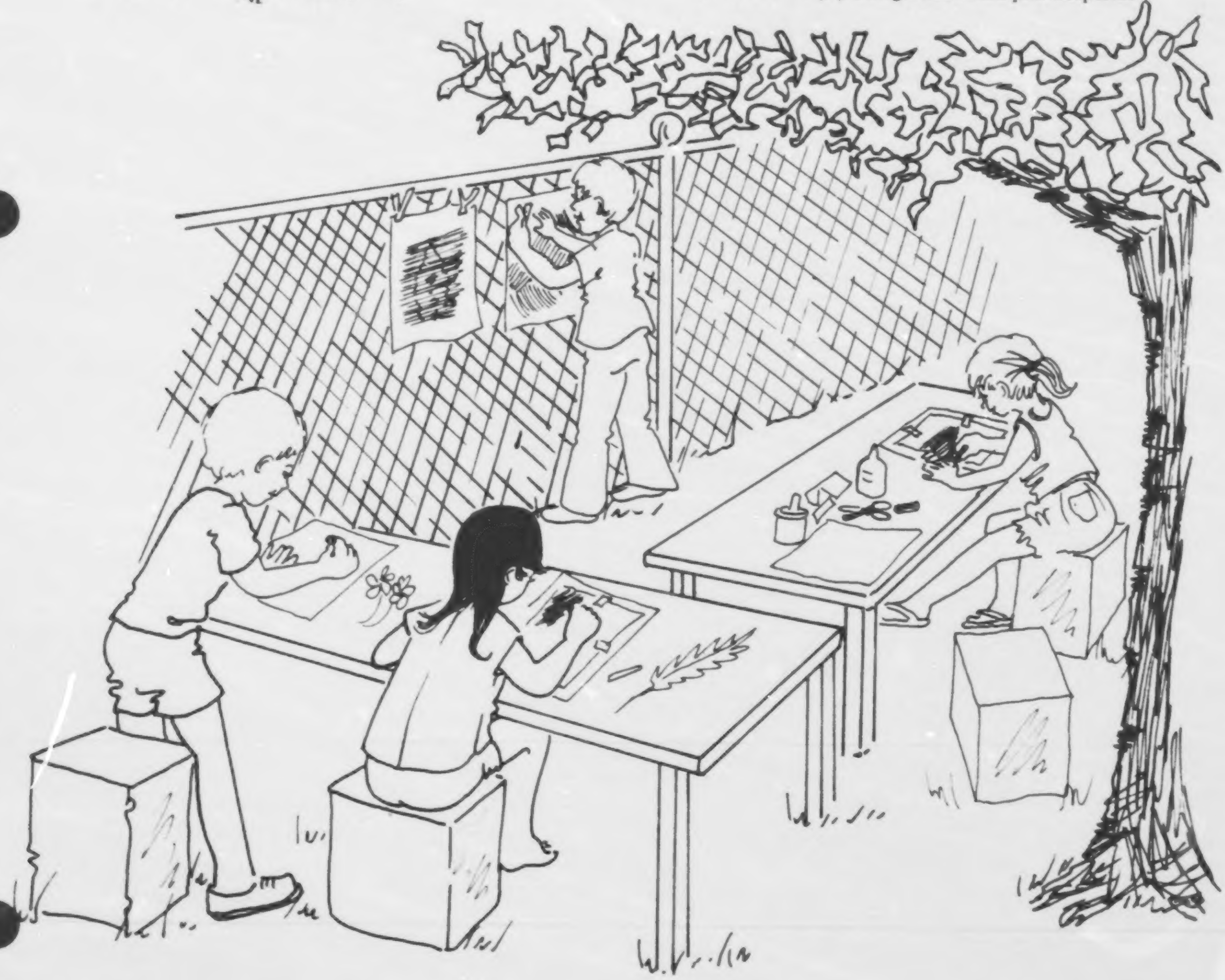
- dark wax crayons, pencil, or chalk
- lightweight, sturdy paper
- tape

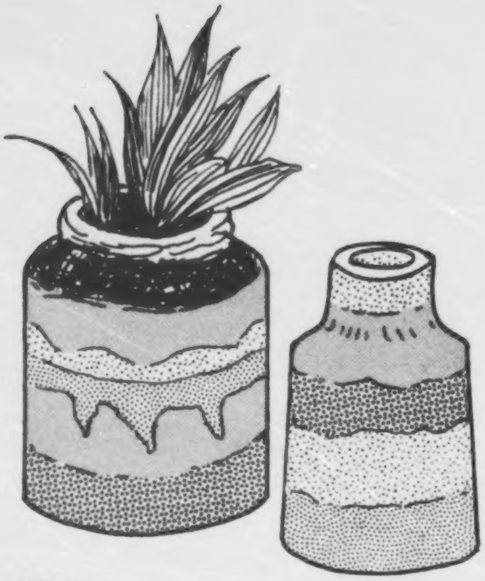
Directions:

Place the paper over the top of the object to be rubbed and smooth the surface by hand. Tape the paper so it won't slip.

If using crayons, remove wrappers and use the side of the crayon. Rub lightly from the center out until the design begins to appear on the paper, then press harder for a clearer rubbing. Make strokes in the same direction.

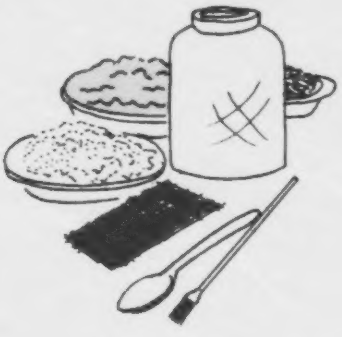
Even the very young child can participate.





Sand Pictures

Making pictures with sand is an old art. Navajo Indians sprinkled crushed stones of different colors onto a background of smooth sand to drive out the evil spirits or heal the sick. Today, school-agers can make sand pictures in jars.

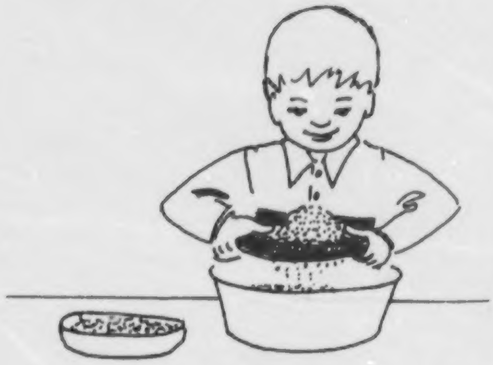


Materials:

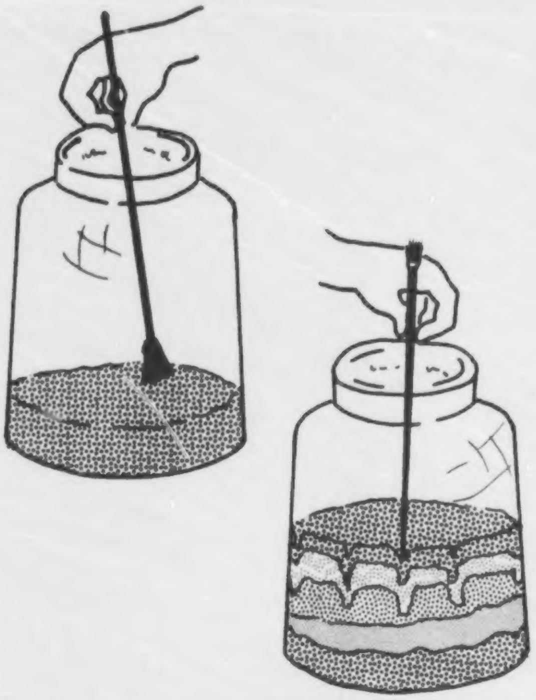
- sands of various colors
- small piece of screen wire or nylon net
- spoon
- brush
- clear, sturdy container that will not break from the weight of the sand (such as pickle jars)

Directions:

1. Sift sand through screen wire or other sifter to remove leaves, twigs, etc. Keep different colors of sand in separate containers.



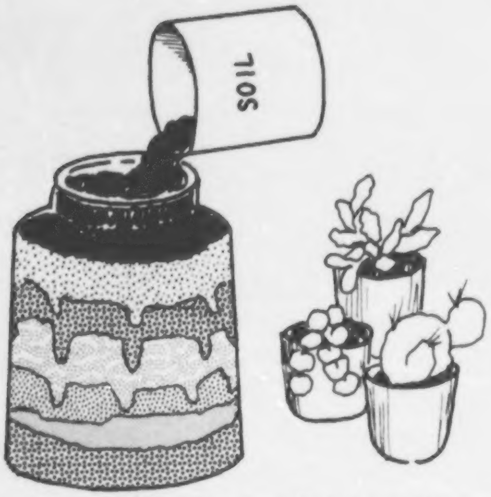
2. Spoon in thin layers of sand. Use brush bristles to level the sand without mixing colors. Brush away sand grains that stick to the side of the jar. (The slightest movement of the container could shift the sand and ruin the design.)



3. To vary the design, press the handle of the paint brush against the jar and push down. The sand will move down and form a pattern with points.

A sand design can become a garden for slow growing plants which need little water (i.e. the cactus).

After the bottle is 2/3 or 3/4 full, add soil.



To water, sprinkle the plant lightly so the sand design will not be spoiled.

Children also enjoy collecting soil samples. Use small, clean, clear containers with lids. Record where each type soil is found.

Tin Punching

Tin lanterns and candle holders, decorated with punched designs, were used by the Pilgrims.

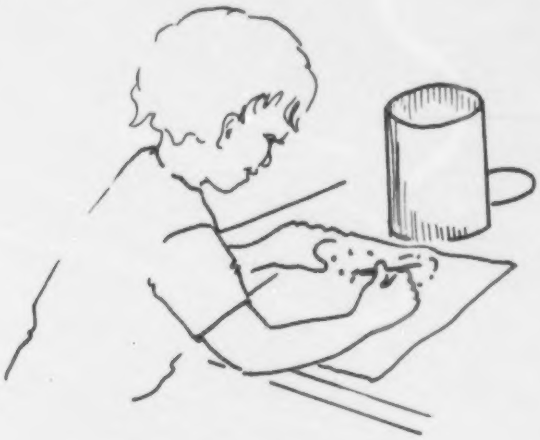
School age children can design lanterns, plant holders, wind chimes, and mobiles. It's easy to find empty tin cans in a variety of sizes and other metal items such as pie tins and funnels.

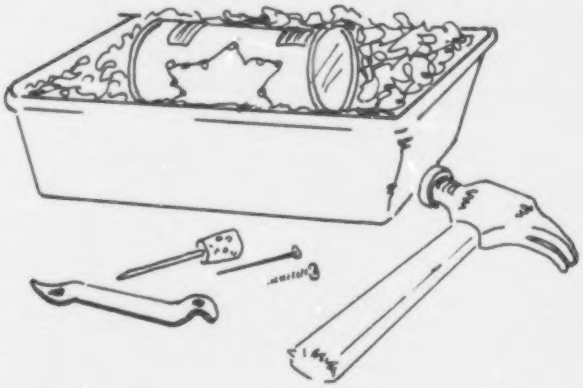
Materials:

- clean, empty cans and other tin items (or aluminum if product is to be hung outside)
- hammer for each child
- nails in a variety of sizes
- can opener
- strong glue (if cans are to be fastened together)
- heavy thread, cord, braid, or other material for stringing and hanging mobiles and chimes
- crosspiece for mobile such as dowling, reed, or small branch
- a candle to demonstrate how the Pilgrims used lanterns

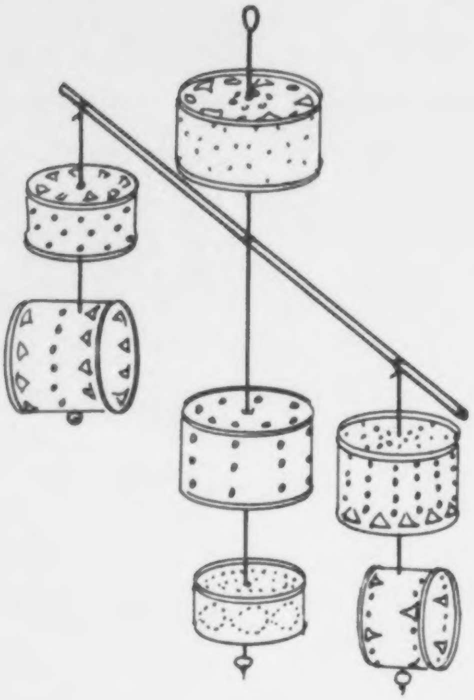
Directions:

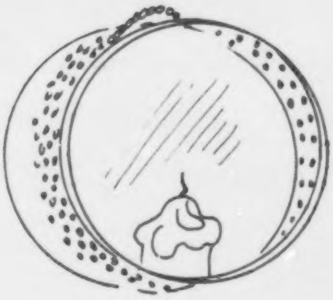
1. Wrap heavy paper such as a grocery sack around the can. Trim paper to size of can and remove it. Repeat with each can.
2. Fill cans with water and leave in freezer until solid ice forms.
3. While water is freezing, draw a design on the paper. Plan size and position of nail holes.

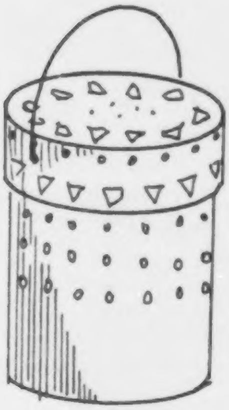


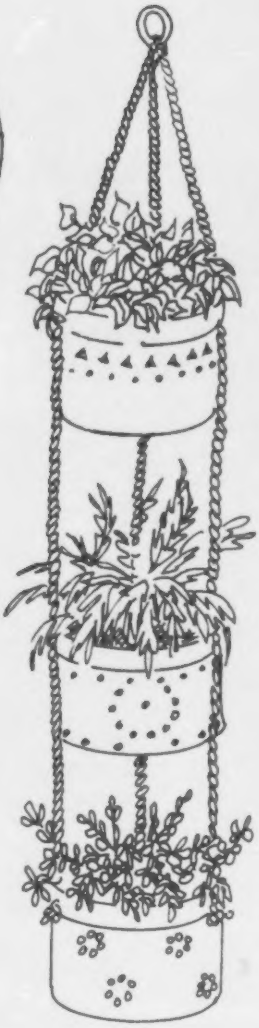


4. Use a pan and crushed newspaper to make a "nest" to hold the cans steady while punching holes.
5. For safety, first push nails through small inverted lids or corks.
6. Remove cans of ice from freezer. Tape papers with designs around cans. Position first can firmly in "nest."
7. Following design, hammer holes into can. Begin close to open end and work toward closed end. (If ice melts too quickly or design is not completed before time to leave, freeze again and continue later.)
8. Make some holes with a can opener. Let ice melt first. Make holes in other cans.
9. Assemble, using glue or wire to hold cans together.









Tin funnels can be combined with cans to make an interesting shape. To fill funnel with water, plug the spout and prop up funnel in the freezer.

Discuss safety precautions to take if candles are lit. Demonstrate how to anchor a candle by placing it in a safe place away from flammable objects. Warn the children about how hot the metal can become.

Candle Making

Candles date back approximately 2,000 years to when they were made of fats wrapped in husks or moss. Candles also have been made from beeswax obtained from the honeycombs of bees, and from tallow produced from the suet of beef and pork.

In early times, most candles were made by a dipping process. Later the casting or molding process became popular. Molding is economical and allows for mass production. Also, molded candles can be easily decorated.

General Procedure

Materials:

- parafin
- candle wick or cotton string
- crayons
- hot plate
- double boiler or saucepan and large can
- wood spoon or stick for stirring
- candy thermometer

Safety Precautions:

Since candle making is dangerous, be careful. Work in a well-ventilated area and place things so no one bumps the candlemaker or the materials. Also:

- melt the wax in its container over hot water, never over direct heat;
- don't leave melting wax unattended on the stove — over-heated wax can burn the skin;
- have salt or baking powder for extinguishing any fires.

To determine amount of wax needed:

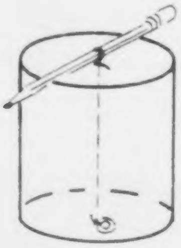
1. Fill mold with water, then pour water into container to be used for melting wax. Mark water level and empty water out of container.
2. Use the water level mark to determine how much wax will fill the mold. To be on the safe side, melt a little more wax than is needed.

To melt wax:

1. Heat water in bottom of double boiler or saucepan.
2. Slowly melt chunks of wax in top of double boiler, or in a large can sitting in a saucepan. Do not let water boil away. Add crayons until wax is desired color.

To pour wax into molds:

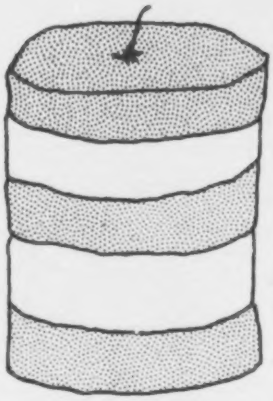
1. Check mold to be sure it can withstand hot wax without leaking.
2. Temperature of wax should be about 160 degrees.



3. Hang wick over center of mold, as shown, before pouring wax. Tie one end of wick to pencil and weight the other end with a washer.
4. Pour wax slowly and carefully into mold. Allow to cool and harden at room temperature. A warm candle may crack if refrigerated.

Removing candle from mold:

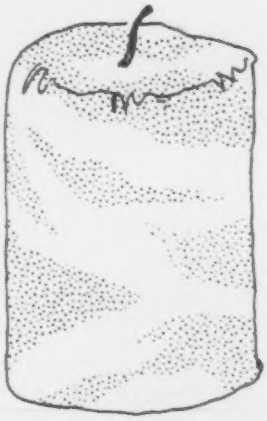
When the candle has hardened completely, it should be easy to lift it from the mold. If not, set candle in refrigerator for 30 minutes and it will contract enough to be withdrawn.



Variations in Color

Striped candle: Melt wax in 2 containers, adding a different color of crayon to each container.

Follow basic instructions used for plain candles, except pour a layer of one color of wax and allow it to cool and harden, and then pour second layer of the other color and allow to cool and harden. Repeat until mold is filled with alternating colors.



Marbled effect: Follow directions for two colors of melted wax. Pour one after the other into mold. Using a slender stick, slowly swirl wax around mold a couple of times to mingle colors and create marbled effect.

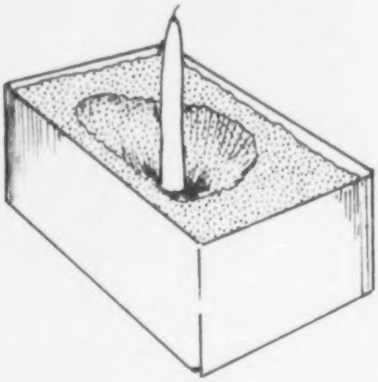
Sand Candle

Materials:
- damp sand for mold (indoors, put sand in a shoe box)
- long candle with wick

Directions:

1. Scoop out a hole in the sand to form a candle mold.

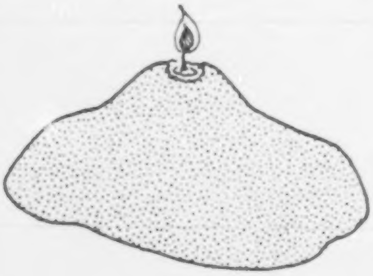
2. Melt and color the wax.



3. Push the candle into the sand at the center of the bottom of the sand mold, so that it stands up. (Large sand candle may have 2 or 3 wicks in different places.)

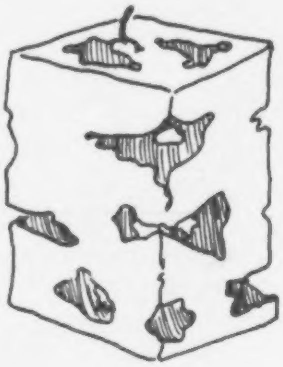
4. Pour in melted wax slowly and carefully so as not to disturb sand in mold. Steady candle wick so it doesn't lean. Level the wax surface.

5. When wax is cool and hard, dig away the sand and carefully lift out the candle. Upper surfaces of candle will be coated with sand. Trim off any extra wick or wax.



Swiss Cheese Candle

Materials:
- large orange juice can (or milk carton) for mold
- ice cubes, broken into large pieces to fill mold
- candle with wick



Directions:

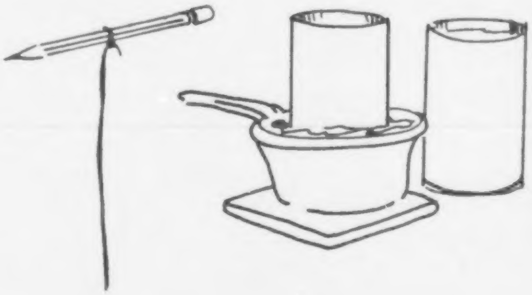
1. Melt and color wax.
2. Place candle in center of carton or can and fill in around it with pieces of ice until container is full.
3. Pour melted wax quickly over ice cubes until mold is full. Level the wax surface.

Dipped Candles

Long, slender candles (or tapers) have been made for centuries by this simple process.

Directions:

1. Melt the wax in a tall can set in a pan of water.
2. Place a tall can of cool water near the container of melted wax.



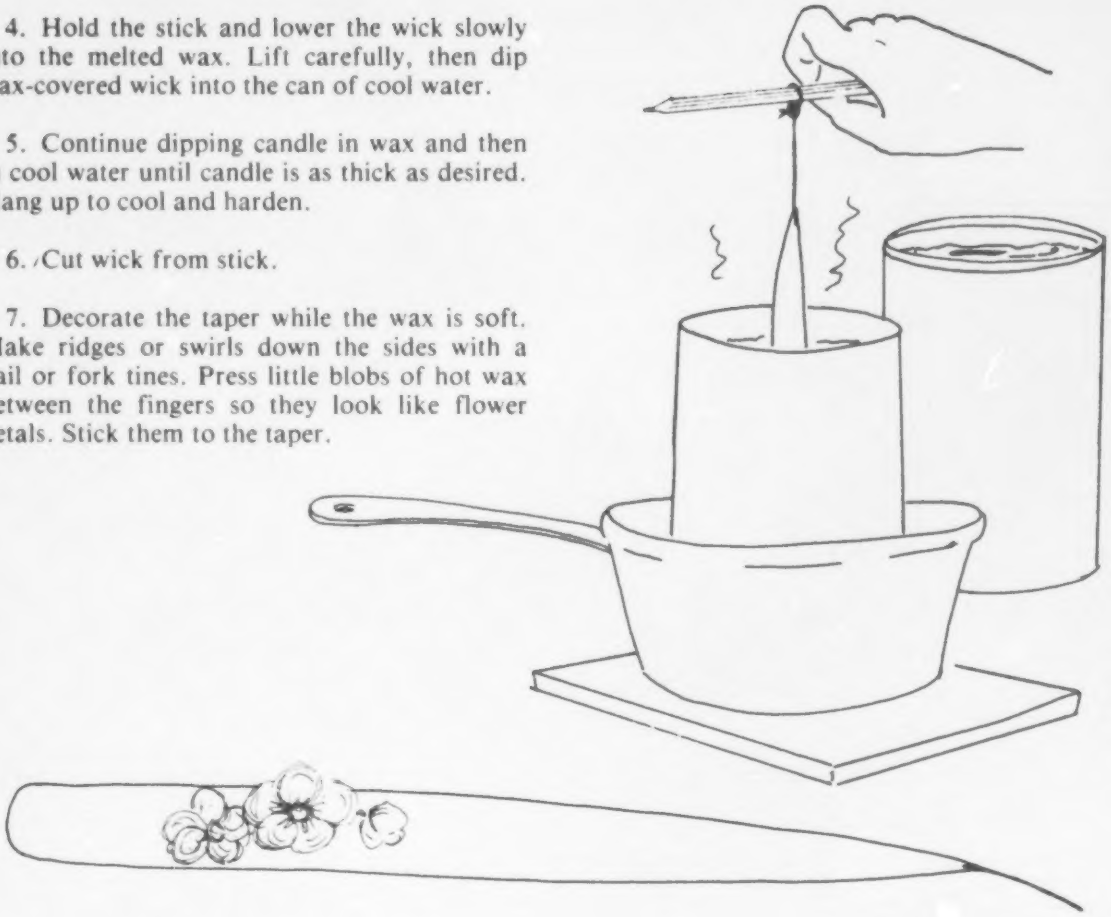
3. Tie a wick (or heavy string) to a stick or pencil, as shown.

4. Hold the stick and lower the wick slowly into the melted wax. Lift carefully, then dip wax-covered wick into the can of cool water.

5. Continue dipping candle in wax and then in cool water until candle is as thick as desired. Hang up to cool and harden.

6. Cut wick from stick.

7. Decorate the taper while the wax is soft. Make ridges or swirls down the sides with a nail or fork tines. Press little blobs of hot wax between the fingers so they look like flower petals. Stick them to the taper.



4. Making Decorations

School age children enjoy making home decorations and often make them to give to parents, grandparents, other relatives, and friends.

They also like to make things for themselves. They can be very creative once basic methods are mastered.

Needlework

Needlework can be absorbing. A form of it will appeal to almost everyone. It is a skill which can develop into a lifetime of pleasure.

To prevent frustration, eliminate problems before beginning.

- *Good lighting* is essential to follow a pattern or outline.
- *Scissors* should be sharp. They should be large for cutting fabric and small for thread and yarn. Have a special pair or two for fabric, and teach the children that cutting paper with them will dull the blades.
- *Organize supplies* and help the children keep them organized.
- *A sewing box* can contain thread, needles, straight pins, a pin cushion or small box for pins, a thimble, measuring tape, and scissors.
- *An embroidery box* can hold embroidery thread, needles, scissors, embroidery hoops, transfer pencils.
- *Needles* are essential. They come in dif-

ferent sizes and shapes according to the kind of needlework. Help the children learn to keep needles sorted when not in use by returning them to the marked folder they came in. Or, make fabric holders and label them "sewing," "embroidery," etc.

* *Fabric* for sewing or embroidery should be cotton or cotton-polyester blend. Others ravel easily, are slippery to work with, or aren't washable. Shrink fabric by washing it before using it.

* *Embroidery hoops* hold fabric taut while it's being worked with.

Sewing

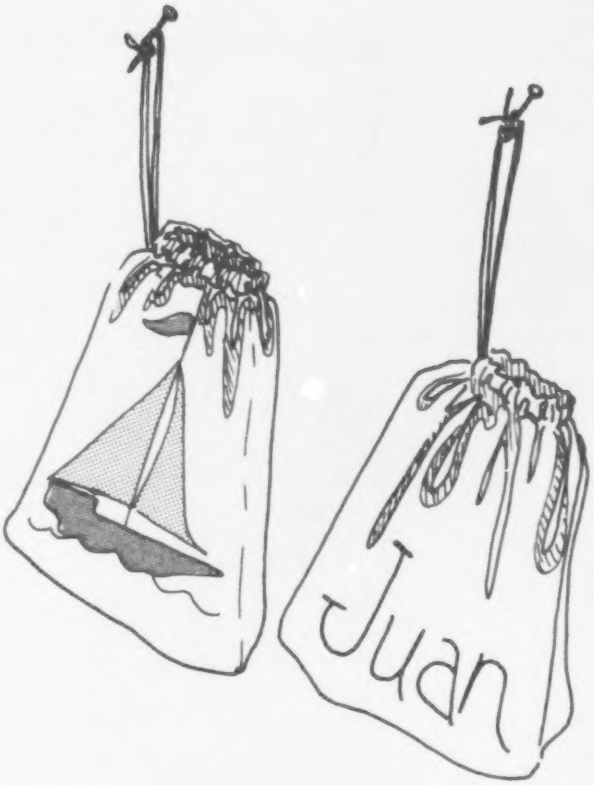
No longer are activities exclusively for girls or for boys. Children now can pursue interests without fear of peer or adult ridicule.

Sewing, for example, has long been considered a girl's craft. But today, more and more boys are becoming interested in sewing and designing.

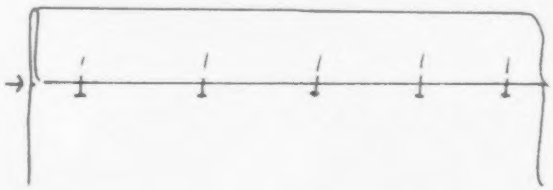
An easy project is making a tote bag. Each child could make, decorate, and use it for field trips and for storing personal belongings at the center.

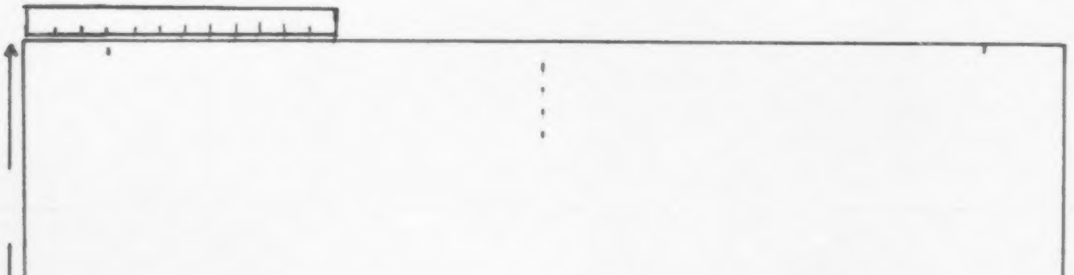
Fabric: Use unbleached domestic, cotton prints, or gingham.

1. For fabric that is 36 inches wide, cut a 13-inch strips from selvage to selvage (stitched side that prevents raveling) to make the tote bag.
2. Measure 3 inches from each selvage and mark lightly with a pencil or chalk.

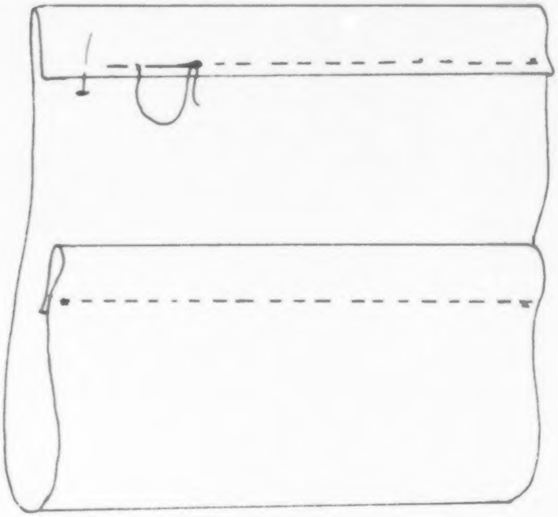


3. Fold selvage edge back even with the 3 inch mark (wrong sides of fabric together). Pin in place.

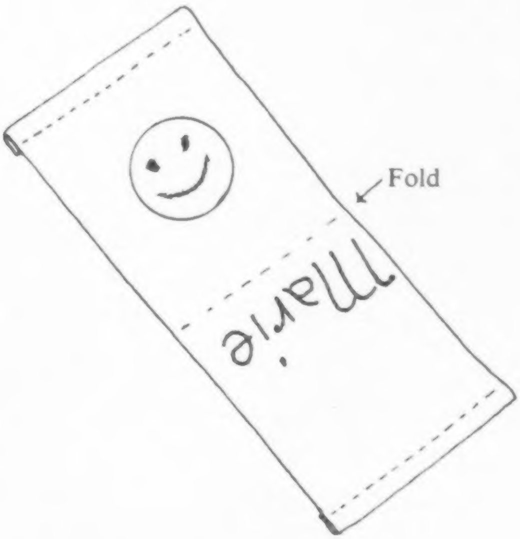




4. Use a double strand of thread, knotted on the end. Make 2 backstitches, one on top of the other. Then make small stitches across to make the hem for the heading. At the end, make 2 backstitches, one on top of the other, pull the needle through the last stitch and loop of thread to make a knot. Cut the thread.

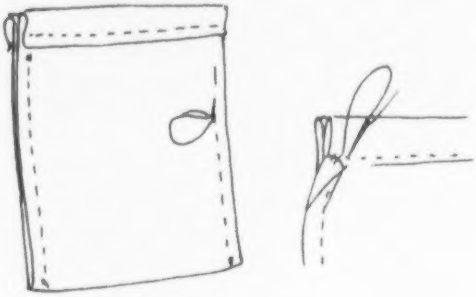


5. On the right side of the fabric, decorate with embroidery or wax designs (as in instructions). Remember that the heading is at the top, the fold at the bottom.



6. Fold the fabric with the wrong side out. Pin along the cut edges.

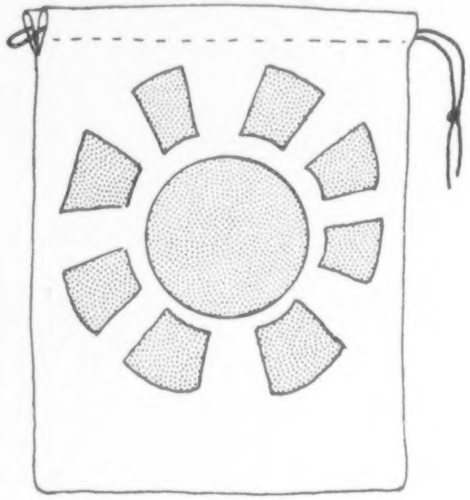
7. Make a seam ½ inch from the cut edge, from the heading to the fold. (Don't stitch on the heading.) Use a single strand of thread and knot. Make 2 backstitches, one on top of the other. Then continue to backstitch to the end of the seam. Finish with 2 backstitches, one on top of the other, and make a knot with the thread. Cut the thread.

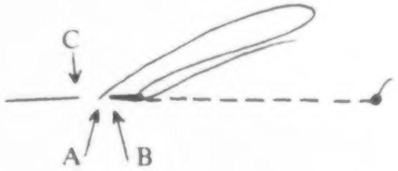


8. Turn the ½-inch seam allowance back on the heading and take in place by taking 2 backstitches, one on top of the other.

9. Turn the tote bag right side out.

10. Cut a piece of cord 30 inches long. Push the end through the heading and tie the ends together.





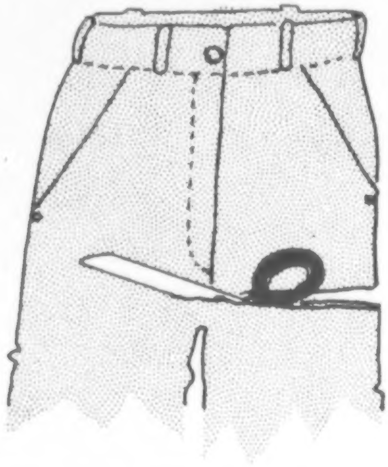
Backstitch: Bring the needle up through the fabric at A. Go down at B. Come back up at C.

Book Bag Made From Jeans

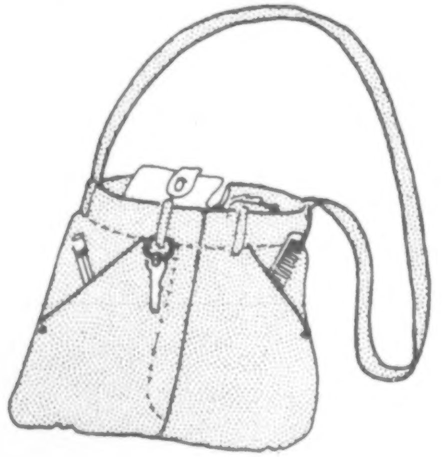
Materials: recycled jeans

Directions:

1. Cut jeans from one side seam to the other on a line an inch below the pants-fly.



2. Turn jeans inside out and backstitch bottom seam.
3. Cut two 2½-inch strips from the jeans leg. They should be long enough to allow the bag to hang comfortably from the shoulder to the hip. With right sides together, make ¼-inch seams along the long sides and one end. Turn right side out, perhaps by running a yardstick through the seamed piece.



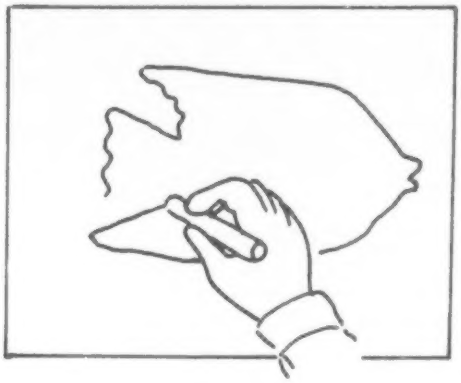
4. Sew the strip to the sides of the jeans above the side seams.

Button Banner

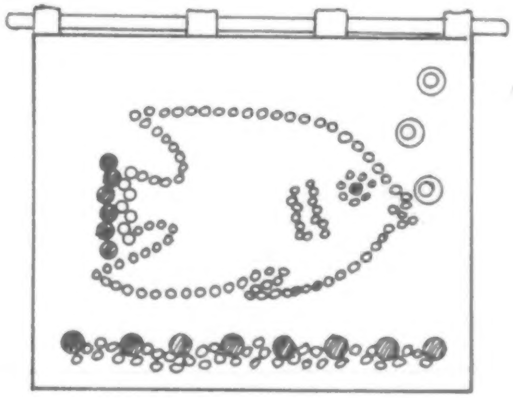
Materials:
- a piece of recycled cloth (felt, denim, poplin, or other heavy fabric, preferably solid color)
- many old buttons - all shapes, colors, textures
- a stick (broomstick dowel, stripped tree branch)

Directions:

1. Draw the design on the fabric with chalk. Keep it simple so that buttons can be used to give it patterns and colors.



2. Arrange the buttons. Use a drop of glue to stick each in place. Let them dry. Then sew buttons in place.
3. To finish, sew narrow loops of fabric onto the banner. Hang the banner by a stick run through the loops.

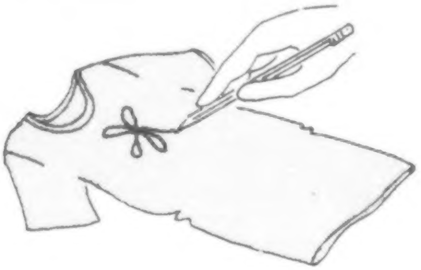


Embroidery

Children enjoy stitching decorations and can be very creative. Encourage them to draw the design or picture on paper before working on the cloth.

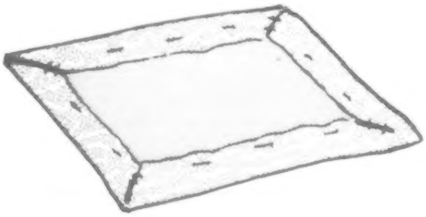
Embroidery needles have long slender eyes and should be large enough to thread easily. They are numbered 1 to 10, the low number signifying the largest needle. Have a variety of sizes so that a variety of thread may be used.

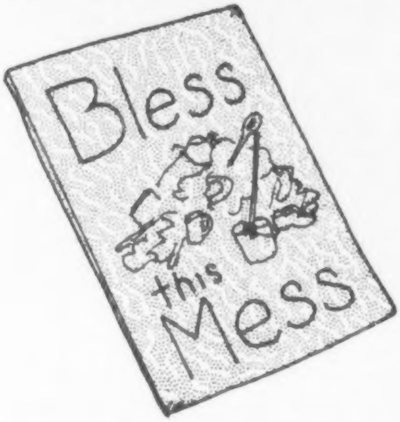
Thread should be 6-ply embroidery thread, cut in 18-inch lengths for easy handling. To keep thread from tangling, teach children to pull out loose thread-ends without removing the paper labels. The thread may be used as 6-ply, or separated into 3-ply. The children can experiment with the size of the thread - single strand thread makes a more delicate stitch than the 3- or 6-ply strand.



On a light-colored fabric, pencil-sketch the design to be embroidered. Or use special *press-on transfer pencils,* available at art stores. Draw or trace the design onto the paper with the press-on pencil, then iron the paper over the fabric.

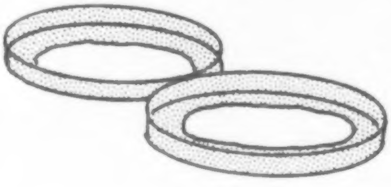
An embroidery hoop is necessary to keep the fabric taut so the stitching will lay flat when completed. Use wooden or metal hoops. Or, staple fabric to strips of strong cardboard, being careful to mount it straight. Pull fabric over the border of the cardboard so fabric edges can be stapled to back of cardboard without the staple coming through the fabric on the cardboard's front. This method works well for fabric to be used as a picture, since it may be left on the frame when complete.



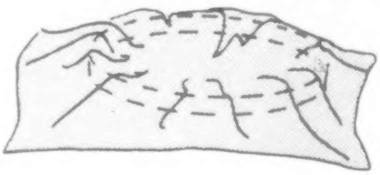


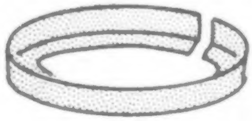
Embroidery Hoop Made From Can Lids:

1. Cut the center portion out of 2 same-size lids.

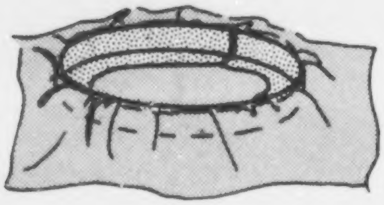


2. Lay one lid, top down, on the table. Place fabric, right side down, over lid, centering the design.

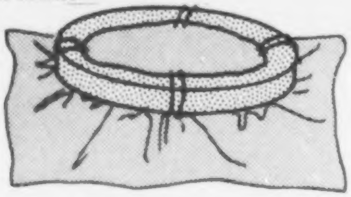




3. Cut out about 3/8 inch out of second rim (as shown).



4. Fit cut lid into fabric on first lid. If the cut ends overlap, cut off more rim until ends of second lid meet, and fabric is held firmly between the rims.



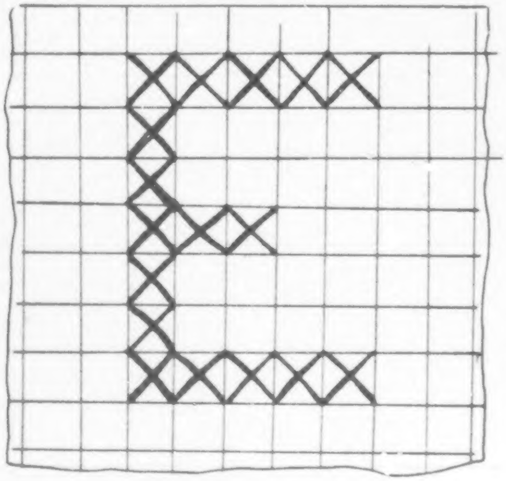
5. Sew basting stitch through fabric, over and under lids (as shown) to hold fabric in place.

Embroidering:

1. To begin, make 2 tiny stitches from the back side, and backstitch once. Some prefer to make a knot on the end of the thread, but this often makes a lump or pulls through the fabric, following the stitch instructions.

2. To secure stitch at the end, take the needle to the back side and take 2 small backstitches, one on top of the other. Or loop thread to the knot, and repeat to knot again. End each design in this way before going to next design.

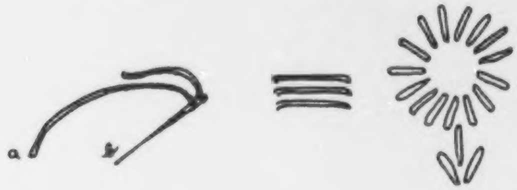
3. Work cross stitches on gingham fabric by using each square as a guide for each cross stitch.



Embroidery Stitches:

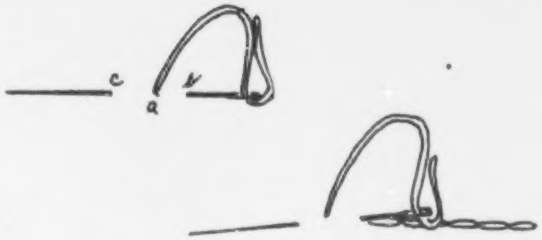
Straight Stitch

1. Bring needle up through fabric at A.
2. Take needle back down at B.



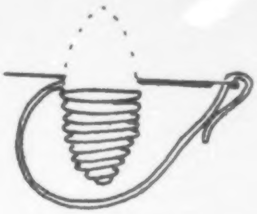
Backstitch

1. Bring needle up through fabric A.
2. Go down at B, the hole made by last stitch.
3. Come up at C. Keep all stitches the same size.



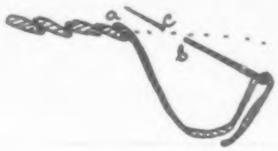
Satin Stitch

Keep stitches close together for solid effect.



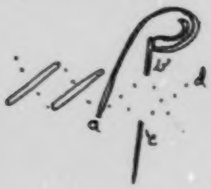
Outline Stitch

1. Bring needle up through fabric at A.
2. Go down at B.
3. Come up at C.



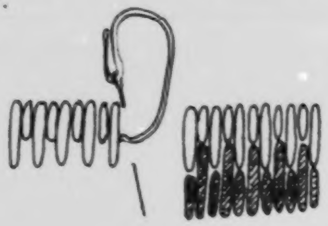
Cross Stitch

1. Work stitches across row, then work back to complete the cross.
2. Bring needle up at A, down at B, up at C, down at D, etc.



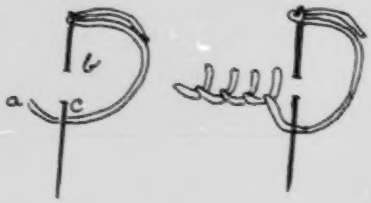
Long and Short Stitch

Work stitches close together, perhaps for an interesting border. Or, to fill in a solid area, start as above, then work second row, making all stitches the same size as the long stitch in the first row.



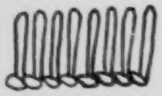
Buttonhole Stitch

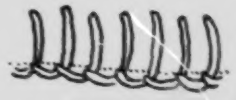
1. Bring needle up through fabric at A.
2. Take needle down at B.
3. Bring needle up at C, making sure the thread from A stays under the point of the needle.



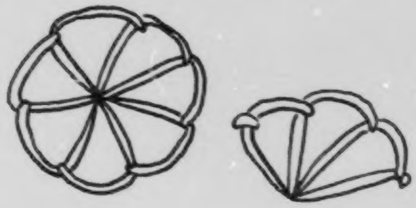
The buttonhole stitch may be worked in several ways:

- for stitches close together;



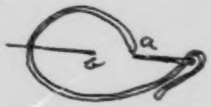


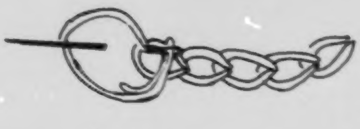
- for stitches farther apart (blanket stitch);
- in a circle for a wheel or flower effect;
- from a central point for a shell or fan effect.



Chain Stitch

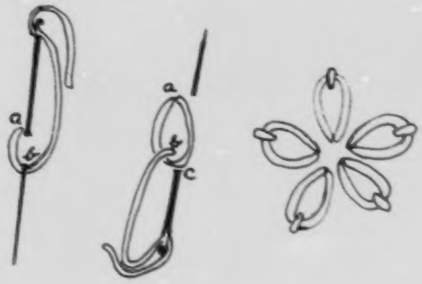
1. Bring needle up through fabric at A.
2. Form loop with thread and hold with thumb. Then take needle back down at A.
3. Bring needle up at B, pulling thread enough for loop to show.





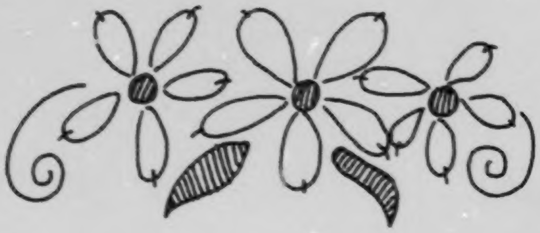
Lazy Daisy Stitch

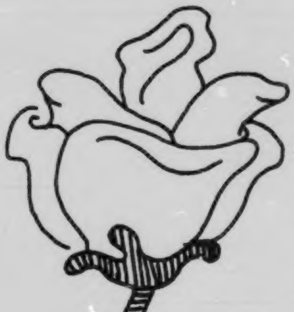
1. Bring needle up through fabric at A.
2. Form loop with thread and hold with thumb. Take needle back down at A.
3. Bring needle up at B, leaving loop the size wanted.
4. Take needle down at C, making a short stitch to hold loop.

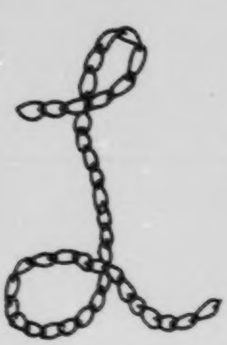


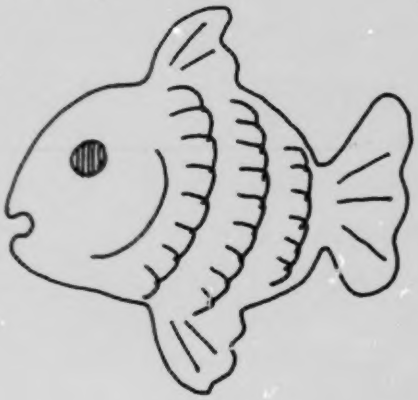
This stitch may be used to make flowers or leaves.

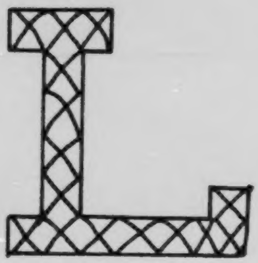
More Ideas:

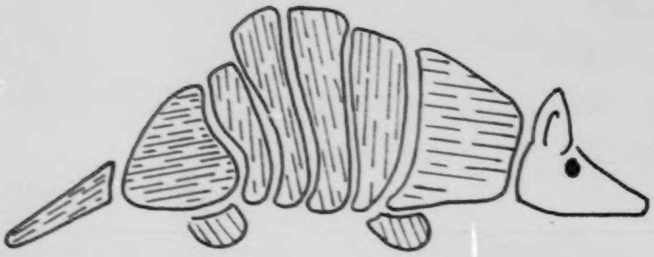


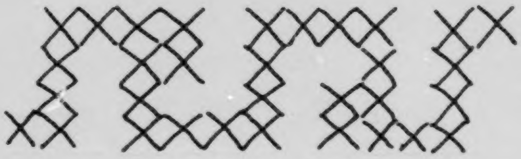


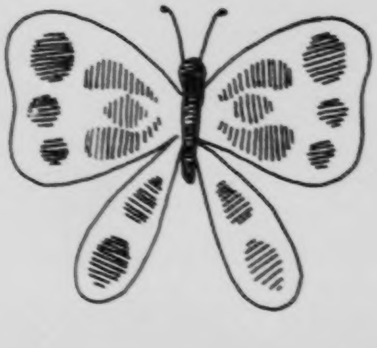


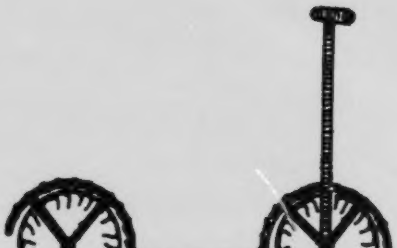








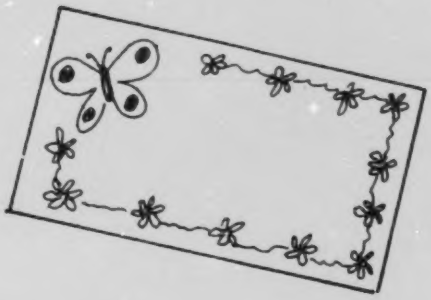


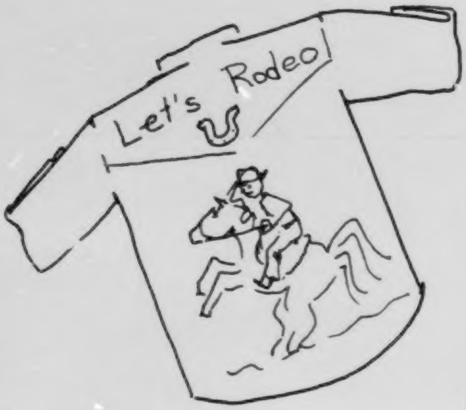


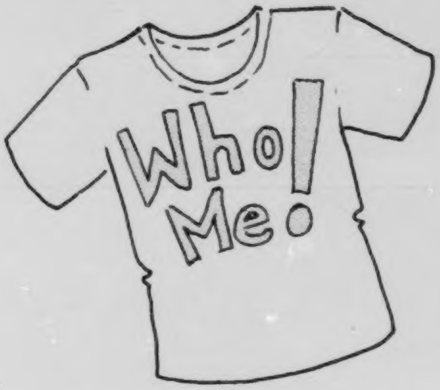
Fabric Painting

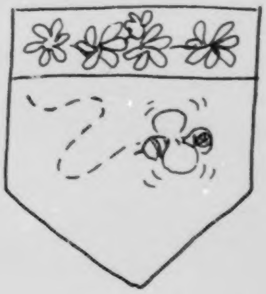
Fabric painting is easy to learn, and is a way of painting almost any fabric that is washable, preferably cotton or cotton blend without nap. (Double knits are not advisable.) Children will enjoy personalizing T-shirts with their names, club names, or emblems.

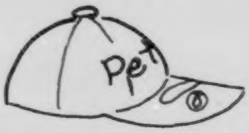
Fabric painting works on aprons, place mats, pillow cases, workshirts, jean pockets, hats, skirts, and T-shirts.









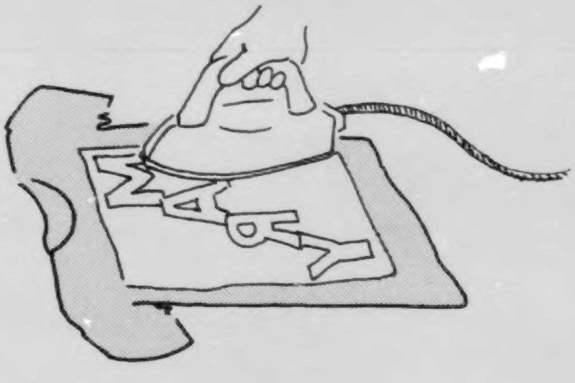


Doing the Designs

1. Draw design on fabric or iron on a transfer pattern.

2. Place transfer pattern carbon side down and pin in place.

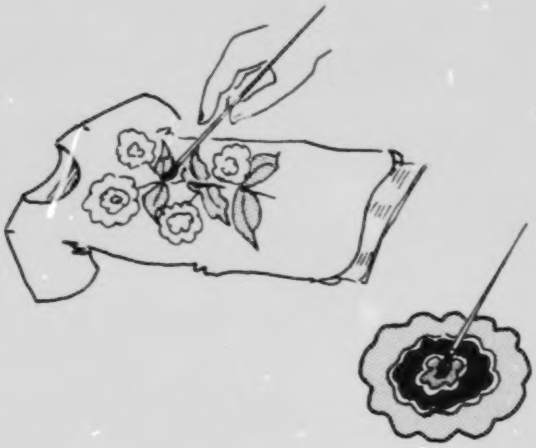
3. Place dry iron onto transfer and hold in place about 15 seconds. Don't move the iron back and forth or the transfer could move out of place. Lift iron. Pull up transfer, leaving the carbon print. (Once transfer is lifted, it is difficult to get it back in place.)



Note: See the section on embroidery for directions for making a transfer pattern. For lettering, trace letters backward from the way they are to read.

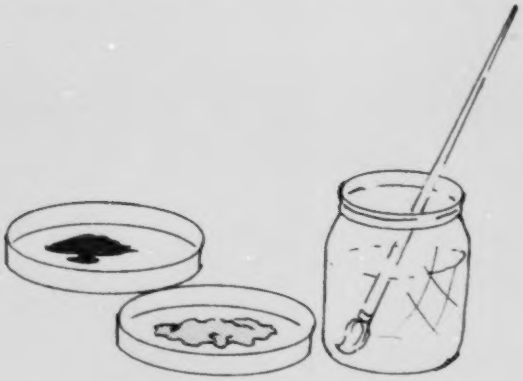
Painting

1. Use brushes and acrylic paint (tube or jar type).
2. Work on a piece of hard cardboard.
3. Squeeze out small amount of paint from tube onto palette. (Paints dry quickly.) Mix paints in small amounts on palette.
4. Paint one color at a time. For instance, paint all the red on strawberries, then paint the stems green.



5. Leave a hairline between adjoining colors so they don't mix and can be outlined later.
6. Before outlining, allow to dry 20-30 minutes. A fine-point ball point pen works great for outlining.

Palette: Plastic, flat lids work great for dabs of paint and mixing. (Or use pieces of wood.)



Baby-food jars make good water bottles in which to wash brushes.

Brushes: Choose good brushes - preferably fine red sable or bristle. For detail work, use #1 or #2 round. For larger patterns, use #3 or #5 round. Most craft stores and some discount stores carry the brushes. Use printing techniques described in the basic art section for applying acrylic paint to fabric.

Setting the Color

1. Let dry overnight.
2. Dampen towel with half water, half vinegar solution.
3. Place towel over the design and iron for several minutes.
4. Wash in warm water with mild soap and wash separately if it's the first washing of the designed fabric.

Hints for Fabric Painting

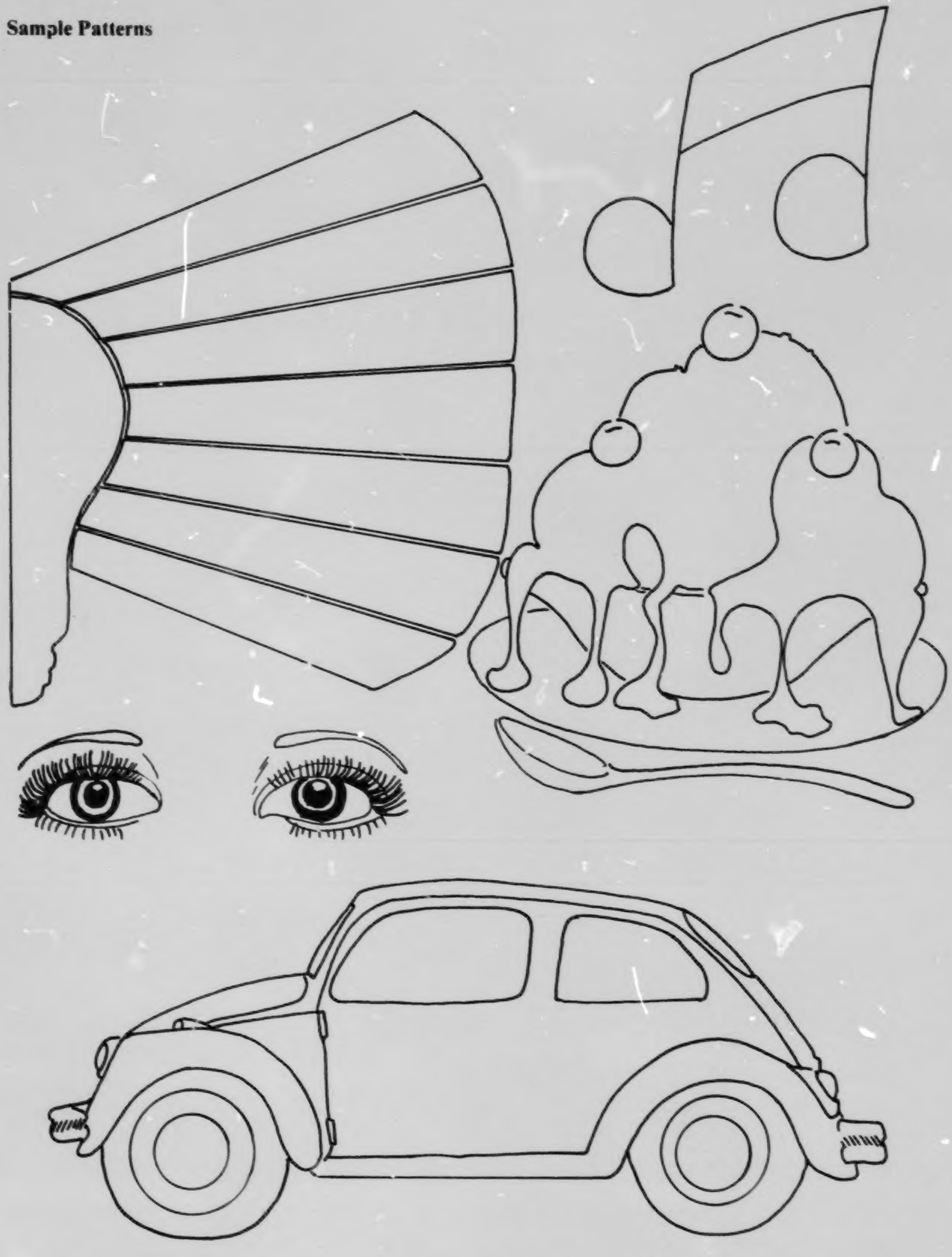
1. Launder to remove fabric finish of new fabric before painting it.
2. Cover ironing board with brown paper to prevent marking it up.
3. After a lot of wear and washings, touch up faded design with fresh paint.
4. Don't bleach. Dry fabric-painted material in the dryer.
5. Fabric will be stiff at first, but will soften the more it's washed.
6. Clean spilled paint with soap and water while it's still wet.
7. Tube acrylics are thicker than jar type and work better on darker fabrics.
8. To mix pastels, start with white and add small amounts of color.

Acrylics to Purchase

- 1 tube red
- 1 tube blue
- 1 tube yellow
- 1 tube white (much white needed to make pastels)
- 1 tube black

Liquid embroidery is another form of fabric painting. To paint designs, use tubes of paint with ball point applicators. Have the salesperson demonstrate how to hold tubes. Ask for instruction leaflet for other hints.

Sample Patterns



Jewelry

Stringing

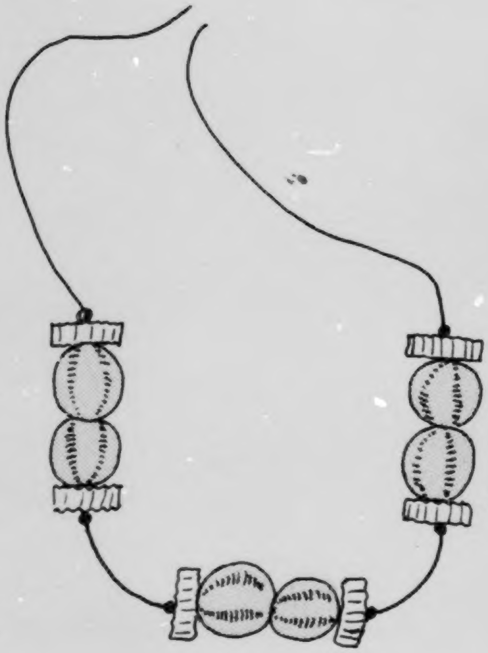
Many packing materials make durable and attractive objects to string. Chopped drinking straws and small bits of styrofoam don't break and hang well. Thin sections of cork, wooden beads, and bits of thin plastic hose also may be hung.

From nature, sunflower seeds and other seeds, cross sections of cornstalk, and pine cone petals are good for hanging.

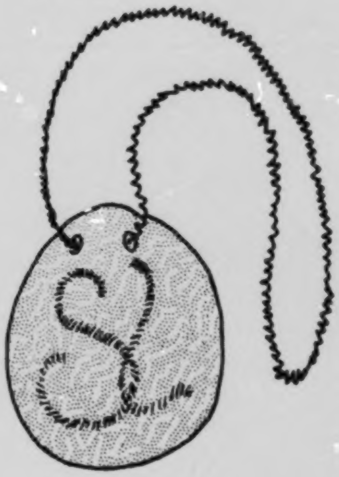
For variety, string some pieces end to end, some side to side. Punch holes with nail, hammer, needle. Seeds are easier to string when they have been softened from soaking in water.

String substitutes:

* yarn
* thin wire
* dental floss
* nylon cord
* twine
* cotton cord
* sharp needles



For variety, tie knots between groups of four beads.

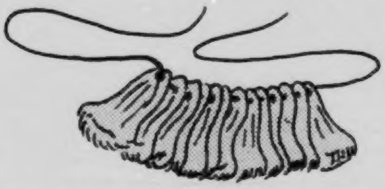


Macrame or braided necklace:

Use the half knot, spiral twist to make cotton cord the desired length. (See section on macrame.) Tie together. Pendants may be made of play dough or bread dough. (See dough sculpture.) Drill hole in pendant and string it. Tie knot on back side of pendant.

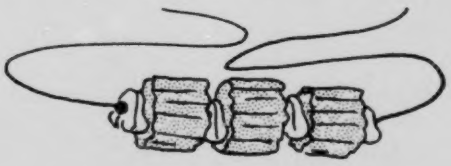
(See sections on macrame and braiding for making chains.)

Other items to string:



Pieces of Pine Cone

Pieces of Corn Stalk with Dried Corn



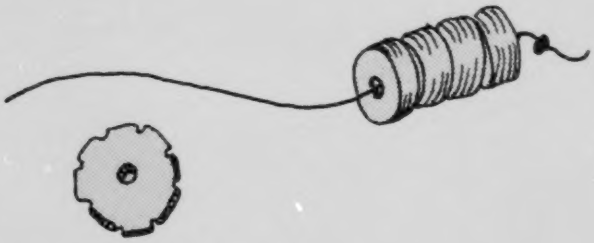
Making Jewelry From Corn Starch and Soda Clay

* durable
* easy to make
* simple to color

1. Blend 1 cup corn starch and 2 cups baking soda in sauce pan. Add 1¼ cups cold water.

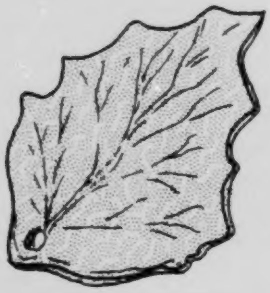
2. Cook 4 minutes over medium heat, stirring constantly until mixture thickens and clings together. (School-agers should cook the mixture with adult supervision.)
3. Cover clay with a damp cloth and cool.
4. Knead clay. Break off pieces to model. Cover remaining clay with a damp cloth to prevent drying.
5. Roll clay ½ inch thick. Use a toothpick to cut clay into shape desired and to make hole for hanging.
6. Allow clay to dry overnight, or longer for thick pieces.
7. The children may paint the clay with tempera or water colors.
8. If the children wish, put clear shellac, nail polish or some other protective coating on either the painted or plain clay. Experiment with applying coats because they are apt to smear.

Beads:



Roll clay into ball, cylinder, or free-form shape. Texture with lines or designs. Make a hole through each bead with a toothpick.

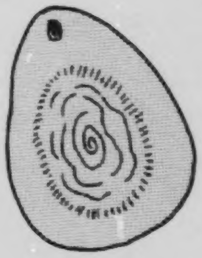
Pendant:



Let the children press a favorite leaf into the clay so the leaf veins will show.

Another Pendant:

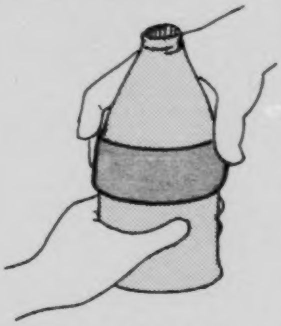
When molding a shape, press thumb or finger into the center.



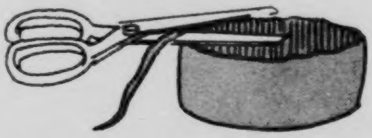
Paper Mache Bracelets

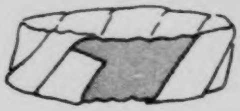
(See section on paper mache for basic techniques.)

1. Use a soda can or bottle.
2. Grease or sprinkle powder on bottle so paper mache won't stick to it.
3. Wrap a strip of newspaper around the bottle. Make it the size of the desired bracelet.

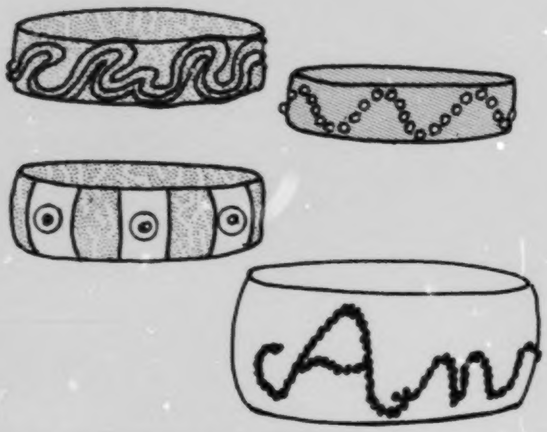


4. For strength, add squares of construction paper.
5. Then add layers of paper mache for desired thickness. Dry slightly.
6. Slide paper off bottle and let it dry completely.
7. Finish edges by trimming with scissors, or wrap more paper mache around edges. Dry, then sand edges.





8. Paint bracelet with gesso.
9. Use several coats for a ceramic-like finish.
10. Dry.



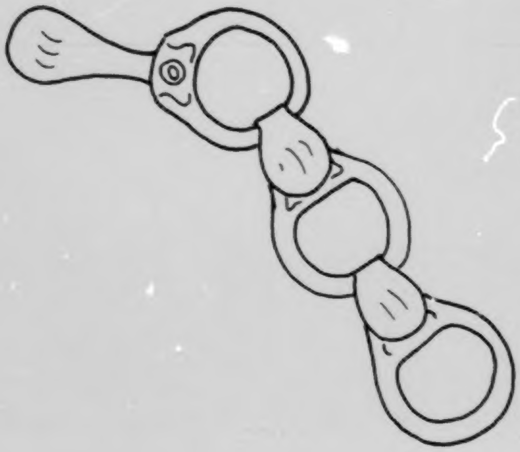
11. Decorate with stones, string, beads, or paint designs.

Pop Top Jewelry

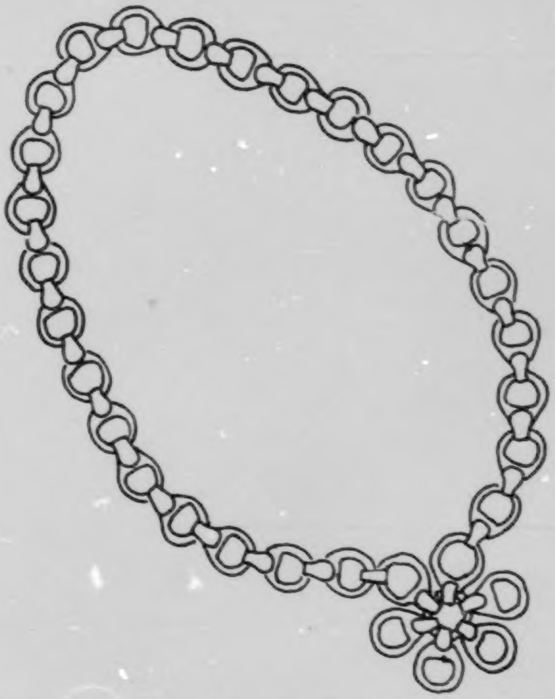
Materials:

* pop tops in good condition, all of one type (40-45 for necklace)
* pliers

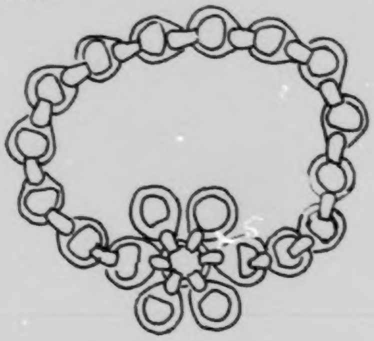
Directions:



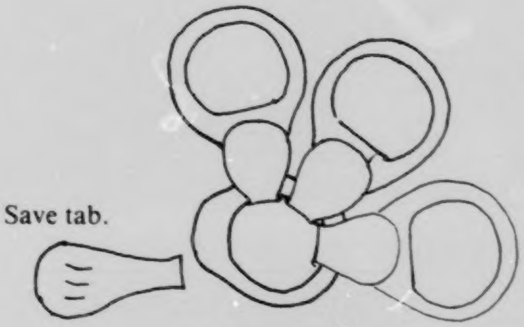
1. Attach tabs to adjoining pop tops, as shown.



2. For bracelet, shorten the chain and center the flower.



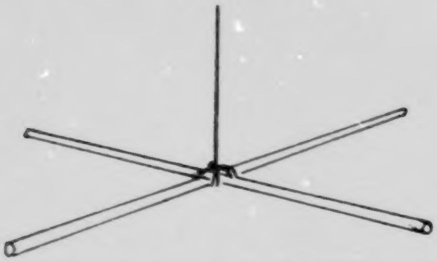
3. To make flower, break tab off one pop top for center of flower. Hook 6 pop tops around center in same manner as for chain.



Mobiles

"Mobile" means moving; a mobile is an object constantly in motion. A mobile can be suspended on wooden dowels, coat hangers, or twigs.

Wind yarn firmly around the center of two sticks to form an "X," as shown below.

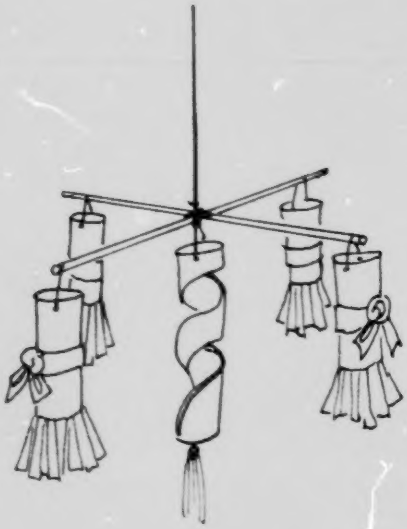


Hang objects with string, thread, yarn, dental floss. For interesting movement, hang them where there's air current.

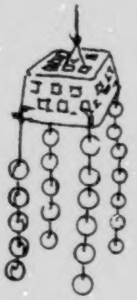
To create unique mobiles, use objects found around the house or from nature:

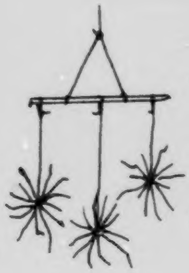
- cardboard rolls;
- bottle tops;
- straws;
- bunches of grass;
- dried flowers and leaves;
- light shells.

Decorate cardboard rolls with paint or fabric scraps, or cut them into spirals.



To make a musical mobile, punch holes in bottle tops with a nail and hammer. String them onto a cord and tie a knot to hold each in place.

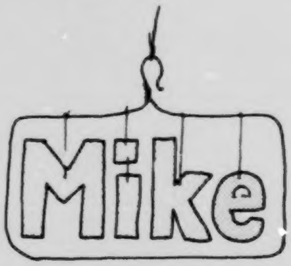


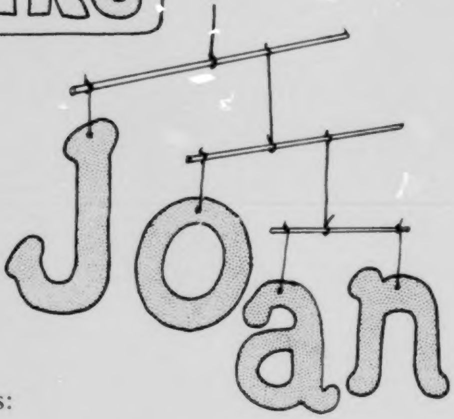


A mobile may be made by tying bundles of grass together with a thread.

Name Mobiles

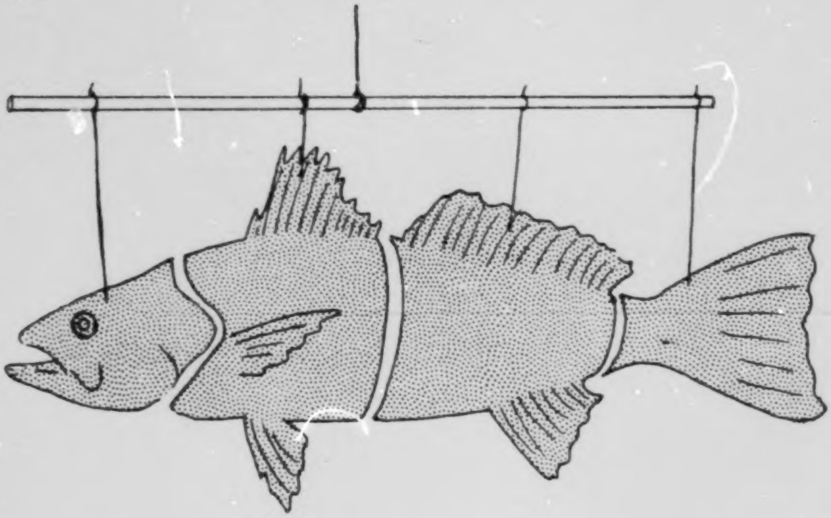
Name mobiles are good for decorating a child's room.





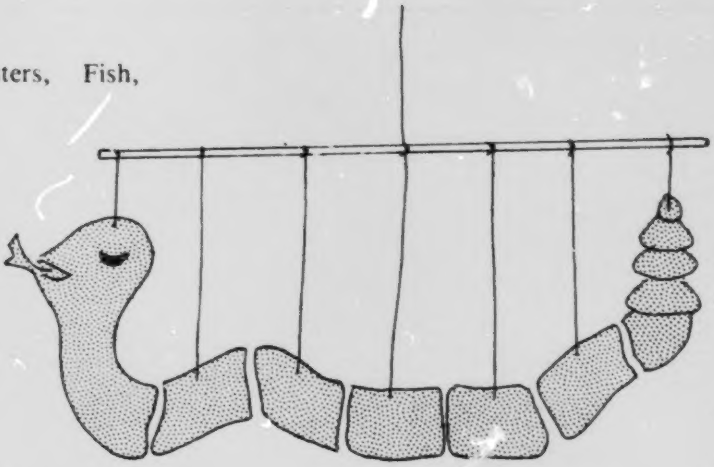
Directions:

1. Cut cardboard letters for names or initials.
2. Decorate on both sides with paint, fabric, crayons, etc.
3. Suspend with several support sticks or one long one.
4. Experiment with balancing lengths of string and sticks.
5. Encourage the children to design original mobiles which can be made inexpensively.

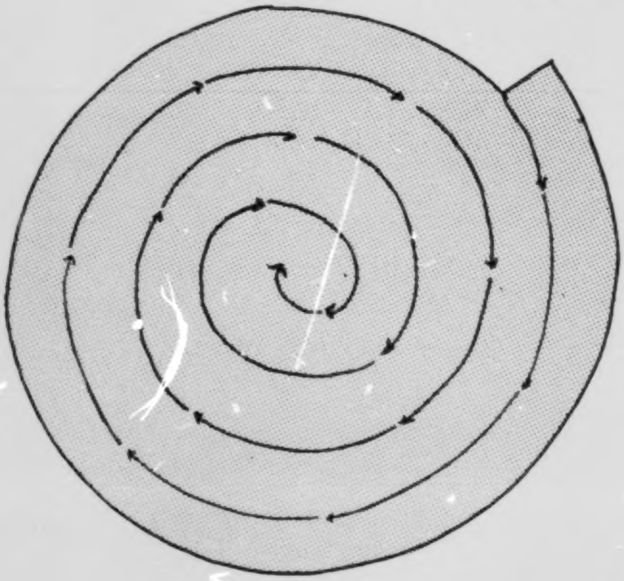


Moving Animals

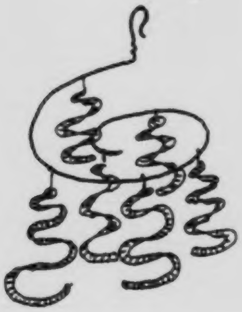
Crocodile, Snakes, Sea Monsters, Fish, Dinosaurs



Cutting a Spiral



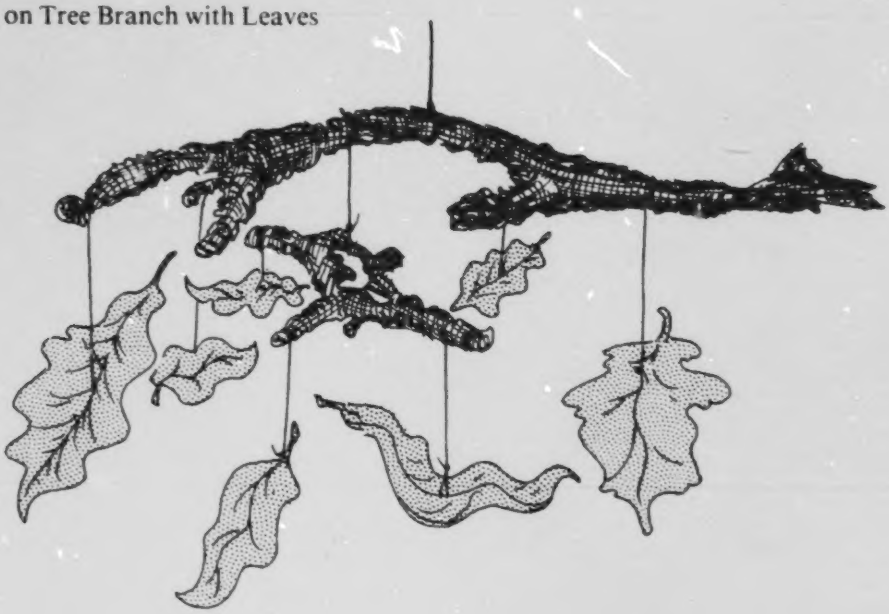
Spiral Mobiles



After cutting spirals, gently stretch them apart to look like springs.

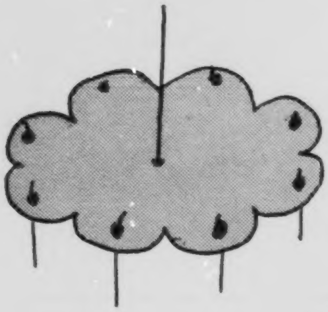
Nature Mobile

Driftwood on Tree Branch with Leaves

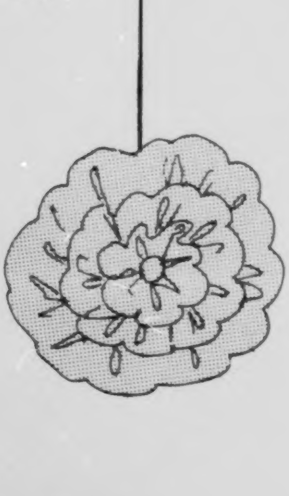


Flower Mobile

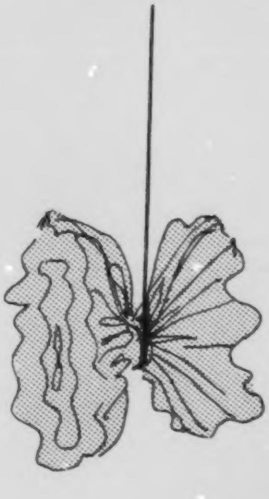
(top view)

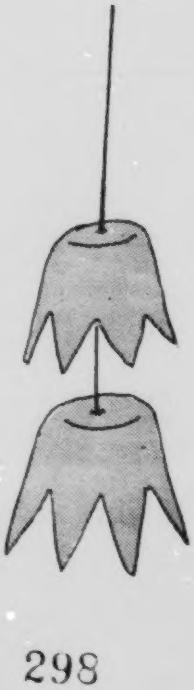


Cut a flower out of colored poster board or heavy cardboard.



To make hanging flowers, use tissue paper, styrofoam egg cartons, or construction paper.



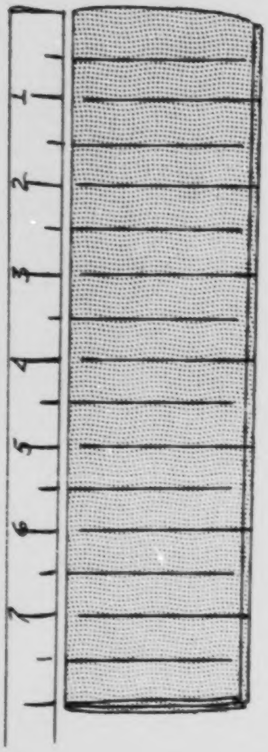


Hanging Paper Sculpture

Materials: thin colored construction paper or typing paper

Directions:

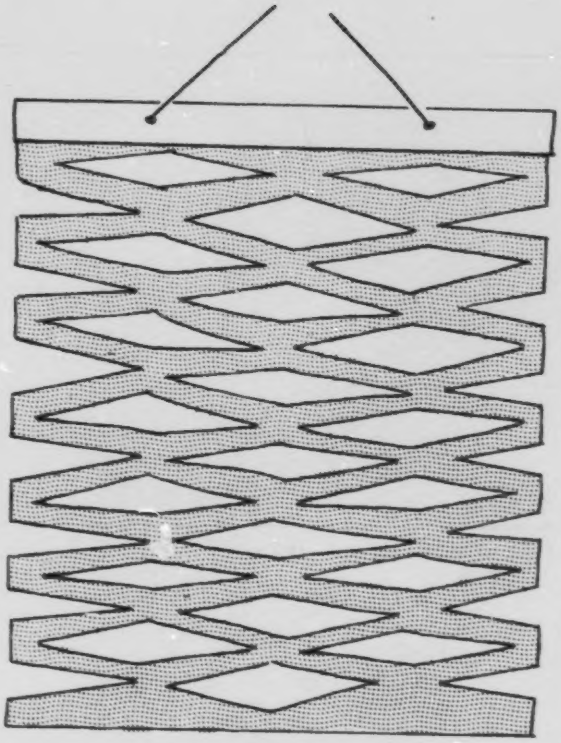
1. Fold paper in half lengthwise, then fold in half again lengthwise.
2. Use ruler and mark every half inch along fold from top to bottom.



3. Mark with ruler horizontally across the folded edges, as shown.
4. Draw a line from right edge to within ¼ inch of left edge.
5. Draw a line from left edge to within ¼ inch of right edge.
6. Continue down the folded page.
7. Cut along the lines. Open carefully.

To mount the design:

Staple or glue a strip of thin cardboard (½ inch wide) across the top. Punch holes in it and tie a string to hang it.

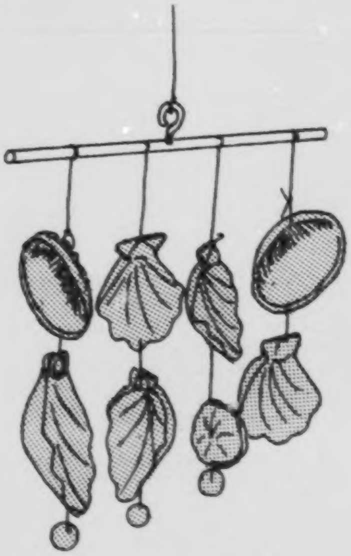


Note: This mobile can make interesting shadows on the walls and a pretty party decoration.

Wind Chimes

Shell Wind Chimes

Clam-type shells make interesting wind chimes.

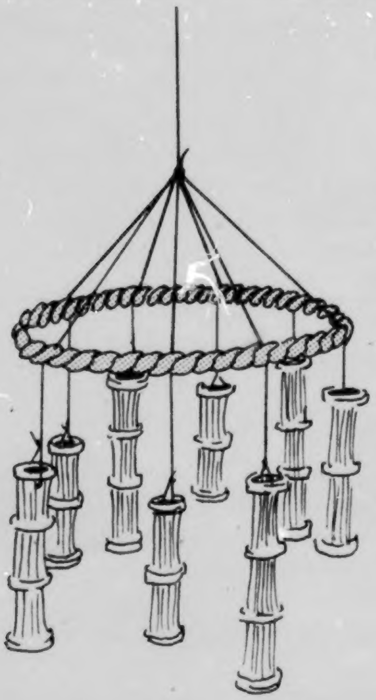


If there are holes in the shell, it can be strung with waxed cord or dental floss (Fig. B). Otherwise, shells are hard and it's difficult to drill holes in them. One solution is to rubber-cement the shells to cotton cord (Fig. C).

Hang shells so they will clatter. For decoration, tie beads at bottom.

Tie cord to stick or dowel about 6 inches long. Put a screw hook into the dowel stick. Suspend with cord tied from either end of stick as in Figure A.

Bamboo Cane Wind Chimes



Use embroidery hoop to suspend mobile. Wrap hoop with colorful yarn and hang various lengths of bamboo stick from it.

Glassware From Bottles

It's fun to change discarded bottles into something decorative and useful. Make ash trays, vases, drinking glasses, or whatever the children dream up. Handle sharp edges carefully.

Materials:
- bottle cutting kit (from craft or discount store)
- bottles of assorted sizes, shapes, and colors
- decorative items – gold braid, acrylic paints, cord, decals, enamel paint if bottle is to be washed

Directions:

Follow directions in the kit. Limit participation to 2 or 3 children at a time because cut edges are sharp and concentration is important.

Decorate bottle with:
- paper mache (see section on paper mache);
- cord;
- coloring (mix food coloring and white glue, paint designs, and dry 2-3 days for translucent finish);
- glue, tissue, and coloring (brush bottle with white glue, cover with strips of tissue paper, brush with water colors for splotchy effect, coat with lacquer after bottle is dry).

To glue bottles together, consider what glue to use:
- Tacky craft glue is excellent for children and available at craft stores. It is non-toxic and dries clear and waterproofed.
- White household glues work well for glueing objects onto glass, if they're not going to be in water much.
- Epoxy and Duco cement are good glass binders but are toxic and should be used only by older children under close supervision.

To paint design on bottle:
- Draw design on paper and tape it inside bottle. Then trace the design on the outside of the bottle.
- To color entire bottle, spray paint works well.

5. Momentoes From Nature: Decoration and Display

School-agers are like pack rats - they collect things from field trips, neighborhood hikes, bike rides, vacations, parks, school playgrounds. They may collect used greeting cards, tiny pictures, shells, rocks, marbles, pieces of colored glass, pop tops, leaves, flowers, pinecones, seeds, bottle tops.

Many of their collected objects can make decorative and useful items. Others may be preserved as valued momentoes.

Decoupage

A child with small pictures of flowers might be interested in decoupaging them on a wooden surface.

Decoupage is the art of decorating surfaces permanently with paper cut outs. The word "decoupage" comes from the French words "decouper" (to cut out), and "collage" (to paste up).

Over 3000 years ago, Siberians cut out felt for wall hangings. Over 1500 years ago, the Chinese cut out paper for decorating surfaces. Polish peasants cut geometric designs from folded paper, cloth, and bark to glue on walls, ceilings, and furniture.

In the 18th century, decoupage was used in France to copy beautiful hand-painted, inlaid designs onto furniture and boxes. In Italy, decoupage was called "l'arte del povero" (the poor man's art) because expensive works of art could be copied and sold at reasonable prices.

Preparing The Wood

Materials:

- piece of unfinished wood (often free at lumber yard)
- old newspapers and cloth
- fine sandpaper
- primer paint or shellac
- basecoat (flat paint of the same color as the final coat)
- brushes

Directions:

1. Spread newspaper on the work surface.
2. Sand the wooden object and wipe off the dust with a cloth. Remove the top layer of newspaper to eliminate dust.
3. Apply a coat of wood primer or shellac. Allow it to dry thoroughly.
4. Sandpaper the surface lightly and wipe dust off.
5. Apply the undercoat, brushing with light even strokes in the same direction as the grain of wood. Let it dry. Sand lightly. Dust.
6. Apply the final coat of finish. Let it dry thoroughly.

Procedure for Decoupage

Materials:

- scissors (cuticle scissors for cutting small details)
- clear-drying or white glue
- varnish or lacquer
- soft cloth
- prints - magazines, commercial prints, greeting cards, seed catalogues, gummer paper, wall paper sample books, etc.

Directions:

1. Cut out the prints. Tear irregularly around the print or into the print for an antique effect. Place print face down and carefully sand the back edges to make them thinner.
2. Test to make sure the ink of the print isn't messed up by the varnish or lacquer.
3. Seal the print surface on one side with a mixture of white glue thinned with ¼ part water. Dry thoroughly. Seal the other side. Dry.
4. Place print face down on a clean surface (wax paper is good) and brush the back sparingly with glue.
5. Place print on the prepared wooden surface and smooth, working from the center outward to remove air bubbles. Do not rub. Use a pin to prick stubborn air bubbles, then press the spots gently. Wipe away excess glue with a damp cloth, or a cloth moistened with vinegar if the glue has begun to dry. Dry thoroughly.
6. Brush the surface with varnish or lacquer, using long flowing strokes. Do not repeat a stroke because the lacquer dries quickly. Don't

add a coat until the previous coat has dried thoroughly. One or two coats should be enough for a beginner's project.

Antiquing:

1. After the second coat of varnish has dried, antique the surface by striking it with a blunt instrument, scratching it with a screwdriver, sandpapering, gouging out the wood, or scratching around the edges. (Who is going to *love* doing this?)
2. Make an antiquing glaze by combining 3 parts Turkey umber, 3 parts turpentine, 1 part clear varnish, and 1 drop linseed oil. More umber will darken the glaze. Raw sienna oil-color may be substituted for umber for a warmer quality. If the glaze does not look good, wipe it off with turpentine before it dries. More linseed oil will cause the glaze to dry slower.
3. Apply the antiquing glaze with a brush or soft cloth. Wipe off with a cloth, following the grain of the wood. Use many gentle strokes. Remove any excess glaze by wiping dark areas with a cloth damp with turpentine.
4. Apply additional coats of finish, using as few strokes as possible and following the grain of the wood. Allow drying time between each coat (40-60 minutes). It may be necessary to sand lightly between coats, being sure to wipe off dust.
5. For a final polish, rub the surface with steel wool to remove the gloss. Buff with a cloth.

Decorating Containers

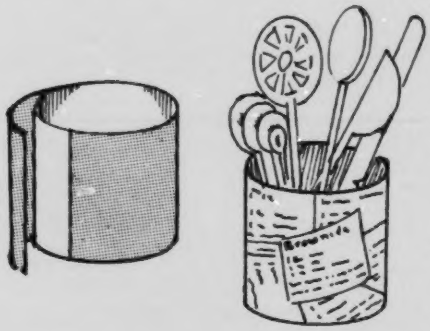
Containers of all sorts can be made into holders for jewelry, make-up, shell collections, or anything valued by the school-ager.

Materials:

- containers such as cans, ice cream or potato chip cartons, cigar boxes
- white glue or clear-drying paste
- felt pens
- spray sealer
- posterboard
- varnish or lacquer
- recipes from magazines
- prints of fruits, vegetables, or flowers (from prints, greeting cards, wrapping paper, wallpaper, sample books, seed catalogues, cancelled postage stamps)

Activities:

1. Test for ink smearing before using magazines pictures by dampening the back of the print with water. Try sealing the ink with a mixture of half white glue and half water.
2. Cover coffee or shortening cans with posterboard cut to fit between upper and lower rim and overlapping itself about an inch when wrapped. Glue on and secure with rubber bands until glue dries.



3. Glue recipes onto the outside surface of the container, overlapping as desired. Dry.
4. Glue on fruit, flowers, or vegetable prints. Gently press out air bubbles. It may help to brush on half white glue and half water mixture over the surface.
5. Letters for labels can be drawn on posterboard, colored with felt tip pens, then sprayed with sealer to prevent the color from fading. Cut out letters and glue on container. Apply another coat of half glue and half water. Dry.
6. Apply several coats of clear varnish, lacquer, or commercial decoupage finish, allowing time for drying between coats. Put the plastic lid on the bottom of the can to protect furniture. Use a plastic lid for cover too, if available.

Decorating Flowerpots

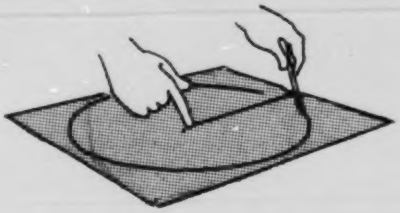
A clay flowerpot is bright and festive when covered with colored plastic, ribbon, and other trimming.

Materials:

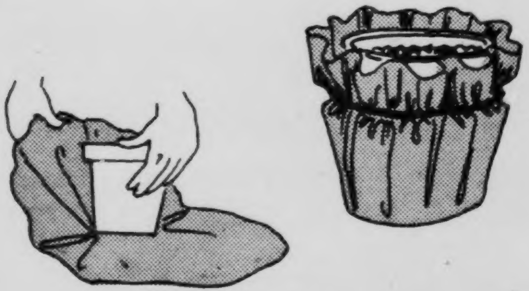
- flower pot or other container
- colored plastic bag
- rubber band
- ribbon or yarn
- scissors
- string and pencil, paper, measuring tape

Directions:

1. Measure flowerpot from center of bottom to top. Add 1 inch.
2. Make a pattern for the flowerpot cover. Tie a string to a pencil, then measure and cut it the same length as the pot measurement. Press end of string into center of paper and draw circle with attached pencil. Cut out circle.



3. Cut a circle in the plastic, using the paper as a pattern.
4. Cut a hole in the center of the plastic circle where pot drainage hole will be.
5. Place flowerpot in center of circle and bring plastic up around pot. Secure with rubber band.



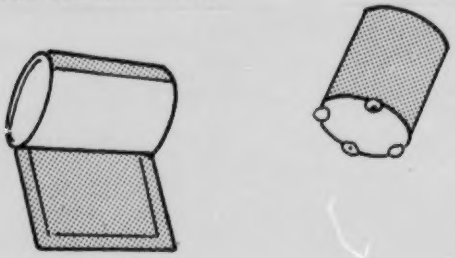
6. Press plastic to sides of flowerpot. If necessary, tie in place with ribbon or yarn.
7. Cover rubber band with ribbon, yarn, or strips of bright fabric.

Shortening-Can Planter

Materials:
- 3-pound can without grooves
- rust retardant spray paint
- fabric
- rubber cement and white glue
- felt
- marbles or wooden beads (optional)
- waterproof fabric finish

Directions:

1. Wash and dry can.
2. Spray lightly inside and out with rust-proofing paint. Allow to dry. Spray again.
3. Cut a strip of fabric 2 inches wider than can and an inch longer than what's necessary to go around can.
4. Fold the extra inch of width on each side under to the back side of the fabric. Rubber-cement in place.
5. Cut out designs of contrasting fabric. Attach to fabric.
6. Attach fabric strip to can. Fold excess fabric under and glue. Fold raw edge under and cement over other end.



7. Glue felt to bottom of can.
8. Glue marbles or beads wrapped in felt to bottom of can to serve as "legs."
9. Spray fabric and decorations with fabric finish.

Decorating With Shells

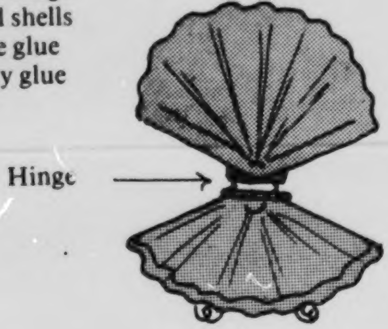
Shells have been used creatively for thousands of years by people all over the world. Ancient Chinese Buddhists thought shells brought good luck. American Indians and Africans used them for money. As long ago as 2500 B.C., shells were buried with the dead. During the 18th century, they were popular decorations for furniture, silverware, mirrors, frames, boxes, vases, and ladies' fans.

Today, shells are used to make pictures and as three-dimensional decorations for baskets, boxes, wall plaques, mirror frames, and hand mirrors. They can be filled with wax to make candles, used as vases or plant containers, glued together to make anything a school-ager thinks of.

There are small shells along Texas beaches, particularly at low tide. Wash them in soapy water and scrub with a toothbrush before using in an art project.

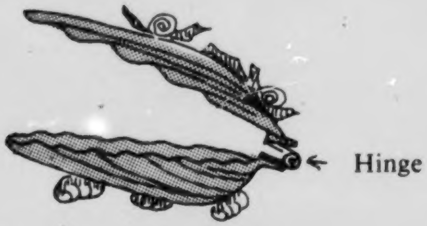
Shell Jewelry Box

Materials:
- double clam, scallop, or other shell
- small hinge
- small shells
- white glue
- epoxy glue



Directions:

1. Glue the hinge to the double shells with epoxy. Put a piece of aluminum foil between the top and bottom shell to prevent excess glue from sticking them together. Put a rubber band around shells until glue dries.
2. For feet, glue 3 small shells to the bottom of the double shell.



3. Glue several small shells to the top for decoration.

Box For Secrets

Materials:
- box (powder box, candy box, stationery box)
- sandpaper
- brush
- white or heavy glue and stick with which to apply it
- clear lacquer spray (optional)
- wooden box, sanded smooth

Directions:

1. Make a shell design on the top of the box. With the stick, put a drop of glue on each shell, being careful to put glue only where the shell is to touch the box or another shell. If several large shells are to be used, it may be necessary to tape them in place until the glue dries.

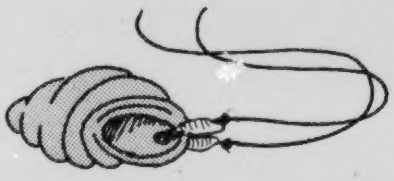
Put oyster shells at the center because other shells readily stick to them. For a "3-D" effect, stack the shells. Prop them up until the glue dries, then remove the support.

2. When top is complete, stand box on one side to decorate the opposite side. Use glue on horizontal surfaces. Use a towel or several thicknesses of paper as a cushion when the box must rest on a side already covered with shells.
3. Allow about 24 hours for glue to dry thoroughly, then spray with clear lacquer if desired.

Note: Small stones can be used in place of shells on most projects.

Necklace, Bracelet, Pendant

Materials:
- shells, each with a hole made by the sea
- yarn, string, or rawhide

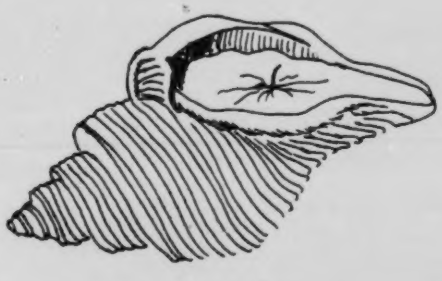


Directions:

1. Thread shells onto string as desired.
2. Tie a knot at each end to prevent slipping.

Shell Candle

Materials:
- large deep shell
- wax or parafin (old candles will do)
- wick
- pencil or stick



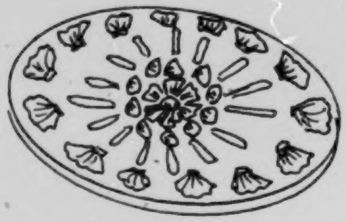
Directions:

1. Suspend a piece of wick over the opening of the shell by tying it to a pencil or stick. Rest wick on the bottom of the shell. Pour wax into shell. Don't let younger children handle hot wax.
2. Allow the wax to harden. Trim the wick.

Plate of Shells

Materials:

- earthenware plate or saucer
- package of spackle (plaster filler)
- tablespoon and knife for spreading
- disposable container for mixing spackle
- poster paint, powder tempra, or other coloring for spackle (optional)



Recipe for spackle:

- 8 tablespoons spackle
- 4 tablespoons water

(Always use 2:1 ratio. Add color to spackle if desired.)

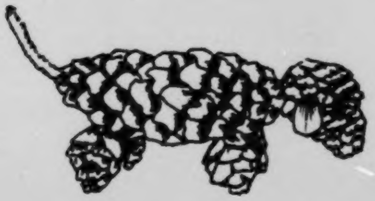
Directions:

1. Spread spackle on saucer to thickness of 1/8 inch. Level off the edges with a knife. Arrange shells by pressing them *gently* into the spackle. Large shells may need a little extra spackle. Spackle dries slowly, so there is time for rearrangement.
2. Allow to dry in a horizontal position.

Pine Cone Animals

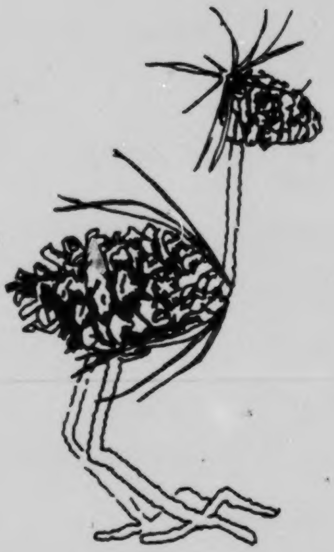
Seed pods, pine cones, sycamore balls, avocado seeds, and many other seeds are beautiful in their natural state. Sometimes children like to use them to make still-life figures, as illustrated with these pictures.

Dachshund



1. To make body of dachshund, use a long and soft cone for body, small cones for legs, medium size cone for head (hard cones from pine trees, soft cones from firs).
2. Use long pine cone scales painted black for ears.
3. For eyes and nose, glue on beans painted black. Use white glue.
4. Use a twig for the tail.
5. Stick clay to bottom to keep the figure from tipping over.

Cone Birds and Turkeys



Use pipe cleaners and pine cones to make funny birds.

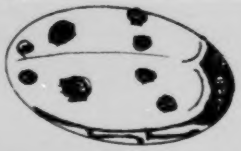
Use construction paper with pine cones for turkeys. Use pipe cleaners for their feet.

Rock Painting

Materials: rocks, bricks, chunks of cement, hollow cement blocks which are clean and dry

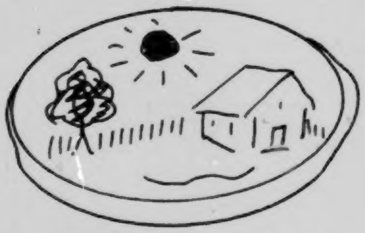
Provide plenty of space, flat pans, sudsy water, and stiff brushes for cleaning. Be sure everyone understands where the drying area is.

Paper Weight



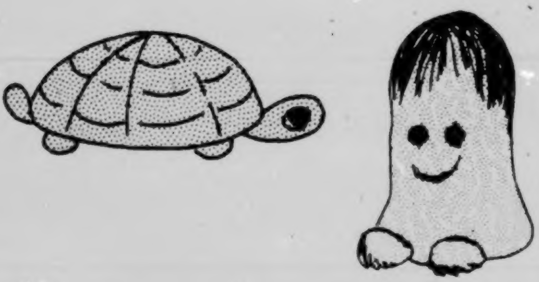
1. Select oval or round, flat stone.
2. Paint with enamel paint (maybe using reds and blacks to depict a ladybug).
3. If water base paint is used, spray stone with a clear spray or paint with clear nail polish.

Rock Picture



For a nice decorative item for a table or shelf in child's room, paint a picture on a large smooth rock. Acrylic paints work well.

Rock Animals

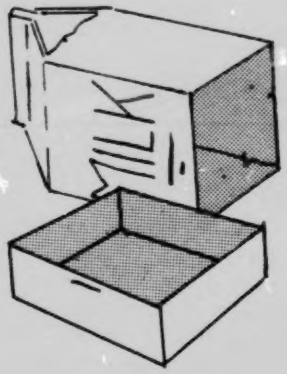


Glue rocks together with white glue. Paint facial features with either acrylics or tempra paints.

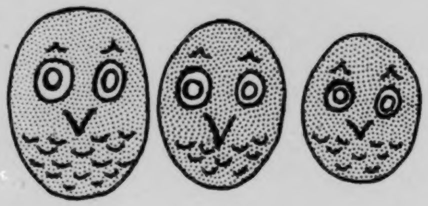
The rocks pictured here were decorated by school-agers, named, and used as centerpieces for a parent-child party.

Rock Owl in Plaster:

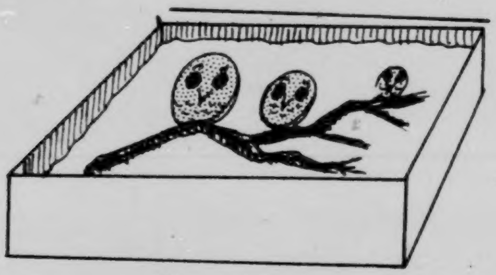
1. To make the mold cut a gallon milk carton down to height of 1 inch.



2. Paint a small, oval rock to look like an owl. Spray finish with clear lacquer.



3. To make plaster, stir 4 teaspoons of white glue into 1 cup of water. Add dry plaster of paris until obtaining the consistency of thick cream. Pour plaster into the carton ½ inch deep. Let it partially set, then press in the stone owl. Add twigs for branches. Thoroughly dry. Tear away from the carton.

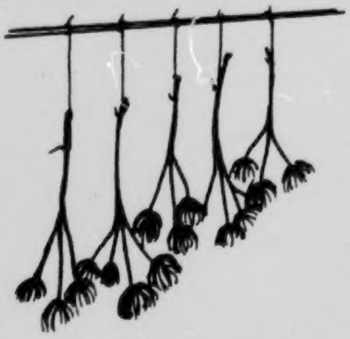


6. Preserving momentoes from nature

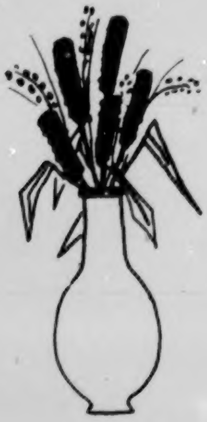
Flowers and Foliage

Flowers and foliage not naturally dried can be preserved by the school-agers. All are inexpensive or free where they grow. (Refer to the discussion about nature walks in the "Science and Nature" section of this guide to learn where to look.)

There are many ways to preserve flowers and foliage. For instance, strip the foliage from the stems and hang the stems with their blossoms down until the moisture evaporates. Some stems must be supported with florist wire.



Once dried, they may be combined with weathered wood, rocks, and other natural material. Some may be made into necklaces, bracelets, or other jewelry.



Leaves

1. Place alternate layers of powdered borax and freshly picked leaves in a box. The leaves must be completely covered and allowed to stand for 4 days. Shake off the borax and wipe each leaf with liquid floor wax.

2. Rub a warm iron over a cake of paraffin wax. Then gently press the iron over the front and back of the leaves. If the leaves curl, iron them back into shape. Waxing prevents leaves from drying out too fast.

Magnolia Leaves

Mix 2 parts water with 1 part glycerin. Place stems of freshly picked Magnolia leaves in the mixture and let stand for serveral days. Leaves will turn brown and last several years. Their surface is naturally beautiful, but they may be painted or sprayed silver or gold.

Cat Tails

When dry, spray cat tails with clear varnish or other fixative to keep them from shedding. They are naturally beautifully but may be colored with metalic powders or spray paints.

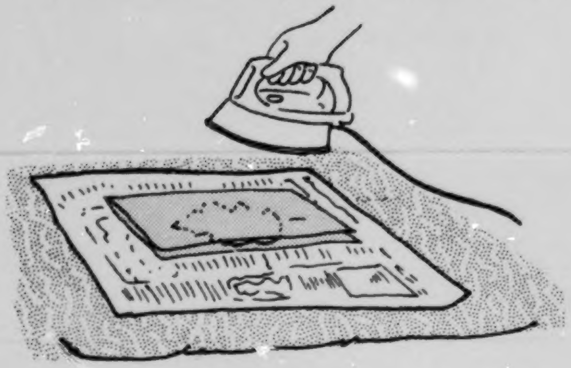
Gourds

Soak gourds for 2 hours in water. Scrape them with a knife to clean them. Rub them with fine sandpaper and cut an opening to remove the seeds while damp. Leave the seeds if the dried gourds are to be used for maracas.

Preserving With Wax Paper

1. Choose the prettiest, least bulky leaves possible. Take a generous size piece of wax paper, fold it in half, and arrange the leaf or leaves between the folds. Staple loose corners if necessary to hold the leaves in place.

2. Place several thicknesses of newsprint on an ironing board, counter, or floor. Lay the enclosed leaves in the center. Cover with several more thicknesses of newsprint. Press carefully with a warm iron. The wax will melt on and around the leaves, and preserve them.



3. Mount. Hang where light will shine through.

Note: Press flowers under books for a few days to flatten. Preserve with wax paper.

Preserving With Silica Gel

1. Some of the white crystals are coated with blue cobalt and act as indicators. When the blue changes to pink, the mixture is damp even though it may feel dry. In that case, spread a thin layer in a baking pan and heat it in a 250-degree oven. When the blue reappears, the silica gel is ready to use. Pour it through a funnel into a 2-pound coffee can. Seal it with masking tape for storage.

2. Retain only about 2 inches of the stem. Bend a short piece of #20 wire around the flower, with which to pull out the flower for later decoration. Place wire and flower into coffee can on a layer of gel.

3. With a small pitcher, pour more gel around the flower. Brush between the petals with a small artist's brush.

4. When the flower is covered with gel, seal the can's plastic cover with masking tape. The flower should be dry in 2 or 3 days or when its tip is black.

Silica gel is sold in major garden-supply shops.

7. Making Dimensional Objects

Baking Bread Dough

History

Bread is older than the recorded history of man. "Raised" or "leavened" bread is thought to have been discovered by the Egyptians around 4,000 B.C. The Egyptians also are credited with inventing the oven for baking dough.

The Greeks were so impressed with the "magic" of baking bread that they created a religious ceremony and feast called the "Celebration of the Bread Goddess."

The word Bethlehem from the Bible means "House of Bread."

Gradually, baked bread became used for decoration, as well as for food and religious ceremonies. Intricate molds for bread were created by Italian and German artists.

Inedible forms of bread dough have long been popular in Yugoslavia, other parts of Europe, and South America. In Ecuador, artists added color.

In South America today, dough art is used in making earrings, bracelets, necklaces, brooches, decorations for mirror frames and pictures, and for making figurines such as those used in nativity scenes.

Basic Dough Recipe

Materials:
- 4 cups flour (not self-rising)
- 1 cup salt
- 1½ cups water
- large flat cookie sheets
- soft paint brush
- serrated knife and large butcher knife
- toothpicks or other sticks to make indentations
- canned milk

Directions:

Mix flour and salt in large flat-bottomed bowl with spoon or rubber spatula. Add water slowly and mix. (Humidity affects the amount of water needed.) A stiff dough gives best results. Form dough into a ball and knead for 10 minutes. Create "dough sculptures." Bake finished sculptures at 325 degrees. Thickness of dough determines the baking time. Usually allow half an hour per ¼-inch thickness. Average time is 1 hour. Be sure joints are hard and figures are rigid when removed from the oven. Dough expands slightly during baking. Brush with canned milk where browned areas are desired.

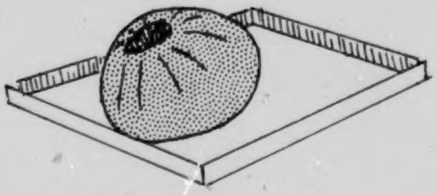
Helpful Hints:

- A smooth and flat cookie sheet insures the sculpture will bake flat. Stainless steel cookie sheets are best.
- Stems, legs, tails, and other long narrow pieces curve upwards during baking. They can be baked separately or broken at a joint and reassembled.
- When joining one piece to another, use small dabs of water. Otherwise, joints bake faster and become too brittle during and after baking.
- Store dough in a plastic bag or container. It dries quickly.
- If sculpture puffs up too much: a) lower temperature; b) knead more flour into dough; or c) poke a hole in the sculpture with a pin to release air.
- Bake very thin sculptures at low temperature or watch them closely to prevent burning.
- Flat sculptures that begin to curl in the oven may be weighted down if they've baked long enough to support the weight without being marked by it. Use metal tools or rocks.
- Sculptured thin shapes representing grass, hair, tails, etc. may brown too quickly unless covered with foil.
- For a large sculpture such as a giant Easter egg, form the shape with newspaper. Cover with aluminum foil. Stick dough to the foil, leaving an exposed area of foil on the bottom for air to escape.
- For a glossy effect, spray the sculpture with acrylic after sculpture cools to protect it from moisture. Use varnish or lacquer if spray is not available.
- Try making jewelry, Christmas ornaments, and table decorations.

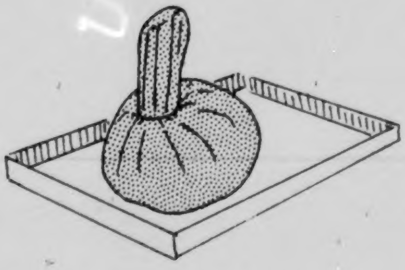
Bread Dough Mushrooms

Mushrooms are a good sculpture for the beginner.

1. Form a walnut-sized wad of dough into a ball by rolling it between the palms of the hands until smooth.
2. Poke a thumb into the ball where the stem will go.
3. With ball still on thumb, use small knife or other tool to make designs on cap of mushroom.
4. Place mushroom cap upside down in cookie sheet, pressing slightly to prevent rolling.



5. Form stem by rolling a small ball of dough between palms or on a table. Shape the stem to fit the hole in the cap.
6. Make vertical marks on the stem with knife or other tool.
7. Dip top of stem in water and place it in cap on cookie sheet. Use as much water as necessary.



8. Add "moss" or "grass" to a grouping of mushrooms by pressing dough through a garlic press.
9. Bake while sculpture is upside down. Cool. Glue to cardboard or other flat-surfaced background.
10. If desired, paint baked sculpture with acrylic.

Natural Pottery Clay

Purchase clay from a school supply store in 2 forms:

- moist (mud) — convenient, pre-mixed;
- powder — more economical

Clay is excellent for modeling because of its smooth texture. It can be fired and made into a permanent product. Preserve it with paint or shellac.

Success depends on the clay's workability, so keep it in good condition. It should be as soft to touch as bread dough.

For storage, clay must be kept moist in an air tight container. Earthenware crocks, plastic covered trash cans, and plastic bowls with tight fitting covers work well if sealed. To prepare clay for storage, make it into balls the size of softballs, make a hole in them with a finger, cover with damp cloth or paper towel. Place lid on tightly. If clay is too dry, fill hole with water before storage. It will last a long time.

Clay can be shaped into many forms. For preserving, air dry or bake them. After drying the pieces, paint with tempra or acrylics, shellac them, or paint with clear nail polish for a glossy finish.

Play Dough

Play dough recipes are in the recipe section. Ingredients are inexpensive, do not require baking, and can be used in many of the same ways as bread dough or clay. Play dough has a texture and elasticity which makes it easy to model, but it becomes brittle with age and does not make a long-lasting product. It can be easily colored.

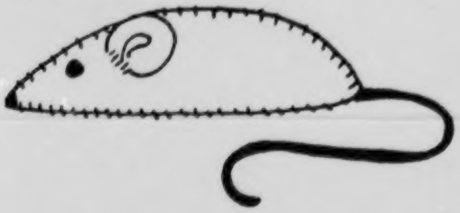
Children can make play dough themselves. When tired of using it in arts and crafts activities, they can play with it outdoors in any number of ways.

Fabric or Soft Sculpture

Soft sculpture is the name for stuffed objects made from fabric and soft filler: a six-foot satin banana-shaped object; 6 small, fat, round pillows fastened together to form a caterpillar; free-form shapes; or anything the child chooses. Soft sculptures can be used to recline in, sit on, cuddle, play with, or as a room decoration.

See the information on pillow-making in "Developing the Child's Environment" for construction details. Use a variety of shapes, textures, colors, and prints of material.

Following is a tiny soft sculpture that could be a gift to a friend.



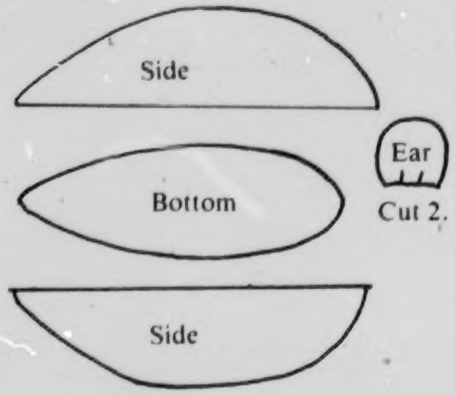
A Friendship Mouse:

Materials:

- fabric scraps
- yarn and needle
- pins
- nylon stocking
  or other stuffing

Directions:

1. Trace pattern on paper. Cut it out. Pin pattern to fabric and cut out fabric.

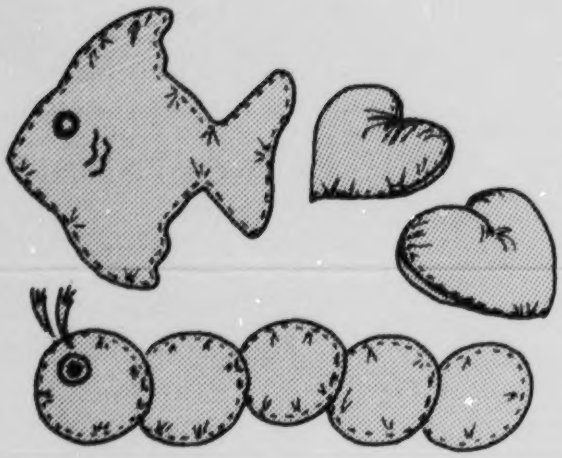


2. Pin front and back sides together and sew around edges with yarn in a blanket stitch. Leave a small opening in which to put stuffing. Then sew up hole.

3. Make facial features and clothing out of felt. Glue or sew them on.

Paper Sculpture

Paper sculpture is inexpensive and excellent to use when a play prop or a decoration is needed quickly.



Directions:

1. Have the children draw the outline on a large piece of paper on the floor. Cut out the figure, trace it onto a second piece of paper, and cut out the second figure.
2. Staple the figures together an inch apart all the way around, leaving a 1-inch opening for stuffing.
3. For stuffing, tear strips of newspaper about an inch wide and 6 to 10 inches long.
4. Stuff, then staple the opening closed. Paint with tempra paints. Hang as a mobile if desired.
5. Small arms and legs may be difficult to stuff. Stuff the bodies and make other features flat or roll them.

Paper Sculpture With Catsteps

Two strips of paper folded together, as described, make a paper spring or "catstep."

Materials:

- colored construction paper
- stapler
- white glue
- scotch tape
- toilet paper rolls

Directions:

1. Cut one-inch strips of construction paper lengthwise.
2. Place one strip vertically and one strip horizontally to the left (Fig. A).

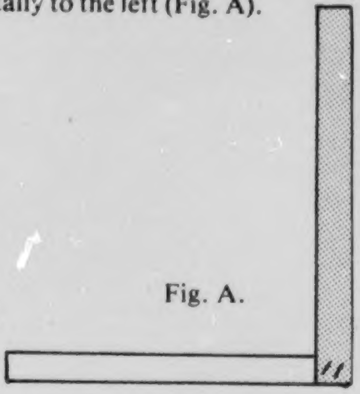
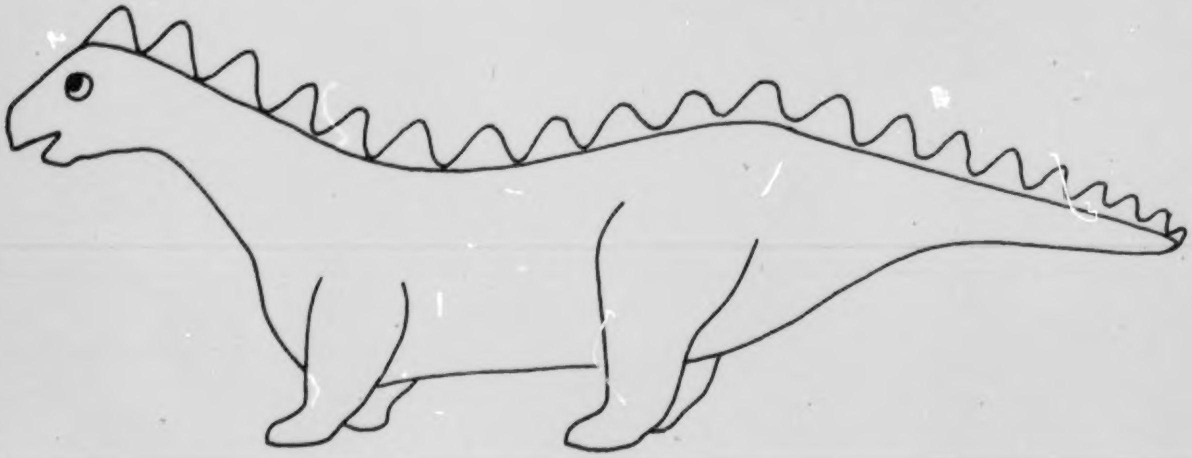


Fig. A.



Bronty

Here is a picture of a big paper sculpture done by school-agers at a center.

Bronty is a Brontosaurus, a dinosaur. Bronty is 14 feet long with a head about 7 feet from the floor, a body about 4 feet long, and legs about 6 inches long.

3. Overlap bottom corners and tape or staple together with the vertical strip on top.
4. Fold horizontal strip over vertical strip (Fig. B).

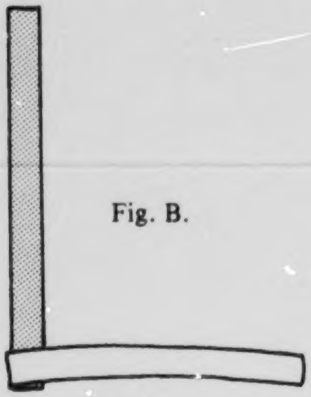


Fig. B.

5. Fold vertical strip down over horizontal strip (Fig. C).

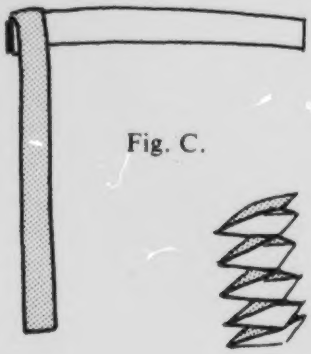
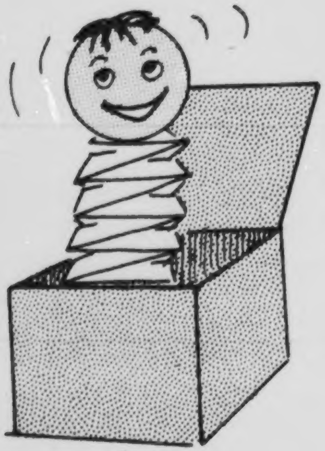
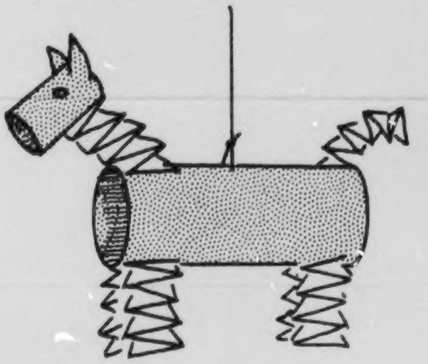


Fig. C.

6. Repeat until arriving at ends of strip. Tape ends of strips together.



To make animals, people, Jack in the Box:
Fasten catsteps to paper body with clear tape. Toilet paper rolls make good bodies, or roll construction paper into cylinders. Make colorful catsteps by using different colors in the folds.

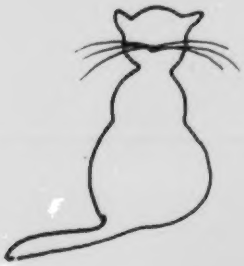


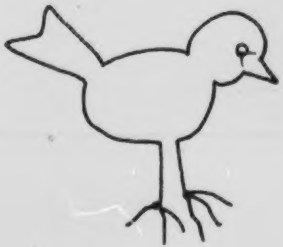
Wire Sculpture

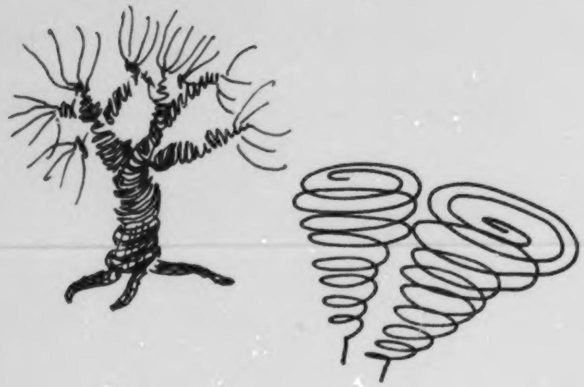
Wire can be bent into many kinds of fascinating animals and floral forms. They may be abstract or realistic.

Use wire that bends easily. Stove pipe wire purchased at hardware stores is good. Coat hangers are stiff but work for some sculpture. Handle them with pliers.

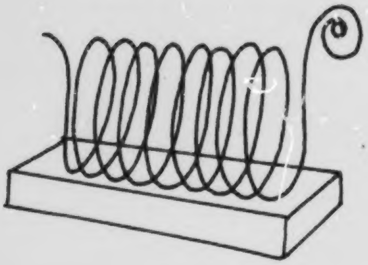
Directions:
1. Either draw a pattern on paper to follow, or bend and create without a pattern. Cut about 4 or 5 feet of wire. Bend it in half and start at the center.
2. Mount on piece of corrugated cardboard or wood, 3 to 4 inches square. Or use driftwood. Bend the wire at bottom where it's to be attached and staple or tape to the base. Hang unmounted ones from ceiling.
Here are some ideas. Note that designs are simple but effective.





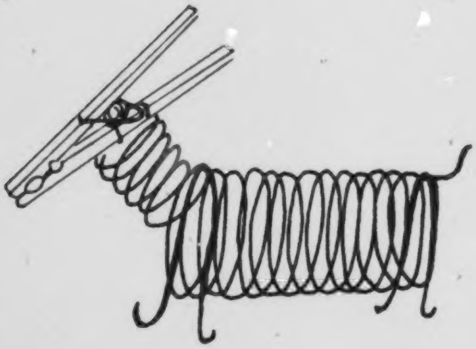


Snake Letter Holder



Make coil as shown. Fold wire up to make neck of snake. Staple to board.

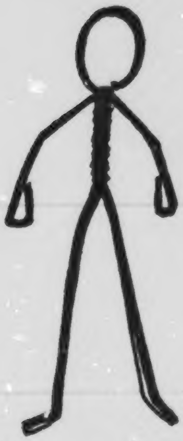
Dog Letter Holder



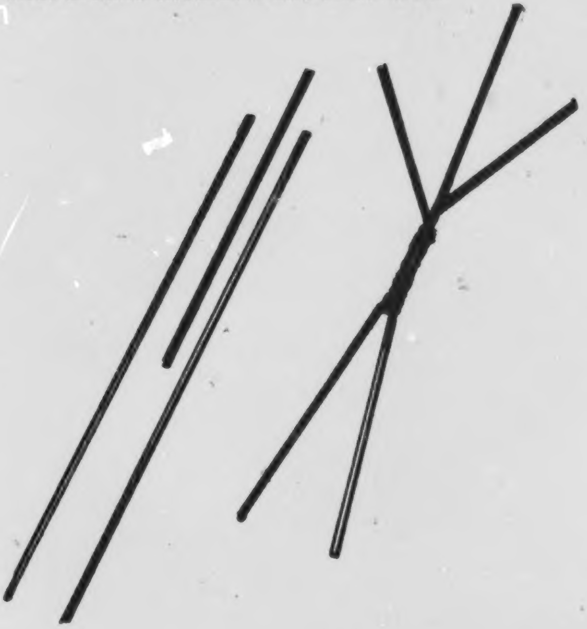
To make coils, wrap around a cylinder shape, then pull off the end.

Make coil for body. To attach legs, wrap 2 horseshoe-shaped wires around the coil. Use tighter coil for the neck. For head, use a clothespin.

People



Use 3 wires, one shorter, as shown below. Make loop for head with middle wire. Twist other wires to form body. Bend out feet at end of legs. Use another wire to form arms. Wrap ends around shoulders and underarms.



Paper Mache

Three-dimensional art is interesting and fun. And, since scrap paper can be used, it's inexpensive. Paper mache can be used to make decorative pieces for a room, jewelry, costumes or props for dramatic play, and household items such as napkin rings or pin trays.

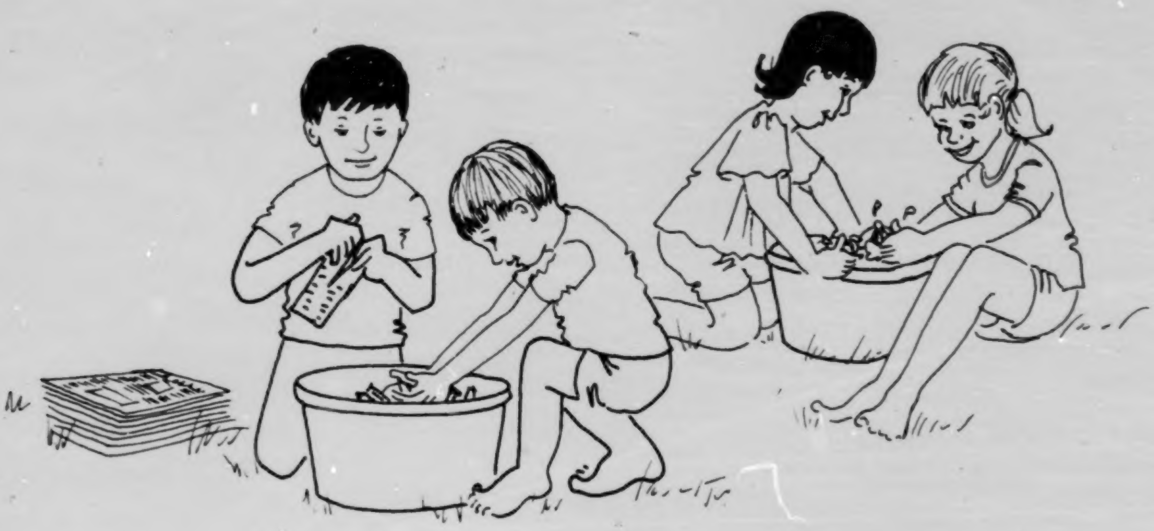
Materials:

- base or mold — folded, rolled, or wadded newsprint, cardboard pieces, tubes or boxes, balloons, glass jars, tin cans (coated with petroleum jelly or wet newspaper if to be removed when paper mache is dry)
- absorbent paper — newsprint, tissue paper, paper sacks, wallpaper, construction paper
- paste — flour and water, white glue (dilute 1 part glue to 2 parts water), or liquid starch (dilute 1 part starch to 1 part water)

Paper Mache Pulp

Directions:

1. Tear absorbent paper into small pieces and place in a pan of water. Manipulate the wet paper until it becomes a pulpy mass (which may be left overnight).
2. Squeeze excess water out of the pulp. Add flour to make it sticky. Mold pulp into shapes. Use a base piece if desired. Place in sunlight to dry.



Paper Mache Strips

1. Tear newspaper in 1/2- to 1-inch strips. Then tear crosswise for smaller pieces to mold around rough or rounded surfaces. When working on large or flat surface, long strips work okay.

2. Dip paper strips into paste. Be sure paper is completely wet, then pull lightly between fingers to remove excess waste.

3. Put strips on base, overlapping pieces in different directions to add strength. Use several layers. Let dry.

Finishing Paper Mache

1. Use sandpaper to smooth rough edges.

2. Apply gesso over the dried paper mache to make a smoother surface for painting. To make gesso, combine equal parts of evaporated milk and white tempra powder.

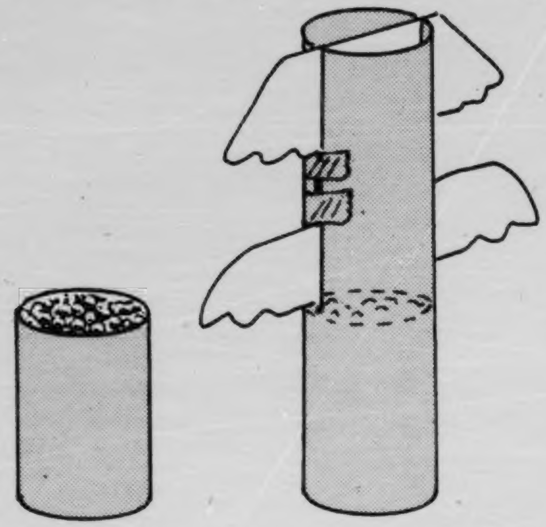
3. Paint with tempra or acrylic.

4. After paint is dry, attach decorations of yarn, buttons, or other small objects with full-strength white glue.

5. For a permanent finish, apply lacquer, shellac, or varnish over tempra paint.

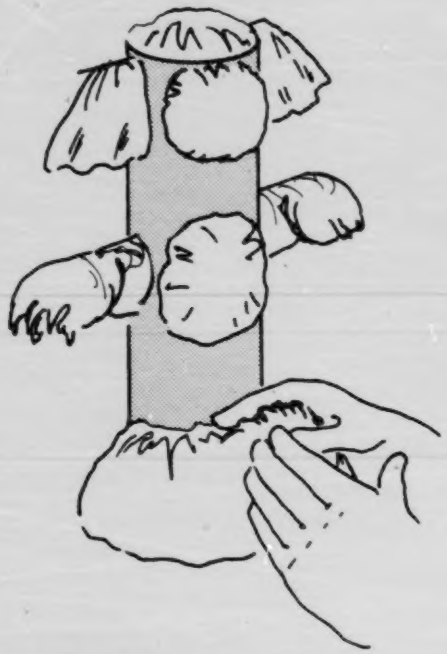
Totem Pole

1. For the base, use a frozen orange juice can. Fill it with small rocks to make it heavy.

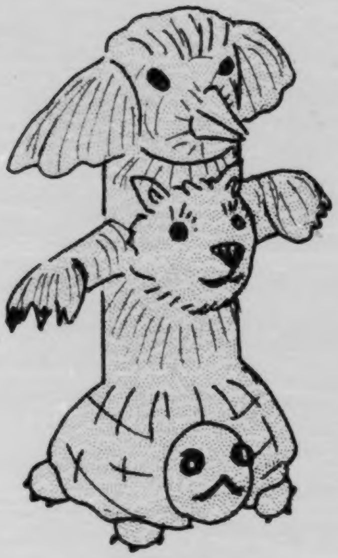


2. For the pole, use cardboard tube from wrapping paper or paper towels, or roll up a newspaper and bind it with tape.

3. For the arms, use cardboard, folded newspapers, or a bent coat hanger.

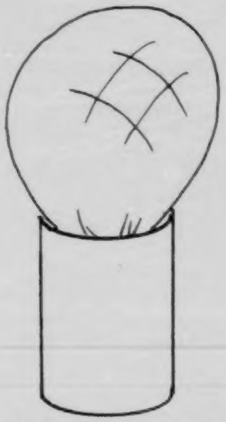


4. Apply paper pulp over the totem form. Fill in around arms and mold other features with paper pulp. Be sure pulp is pressed on securely and let it dry. Paint designs and 1-dimensional features with tempra paints.

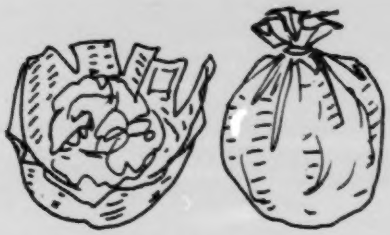


Life-Size Head

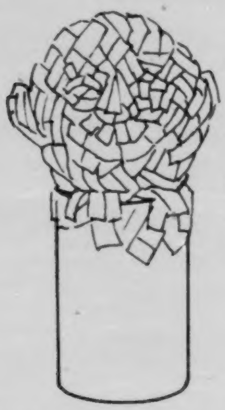
1. For the base, use a cardboard oatmeal box.



2. For the head, blow up and tie a balloon and set it into the open end of the box. Or, instead of a balloon, use crumpled newspaper shaped into a ball and covered with newspaper.

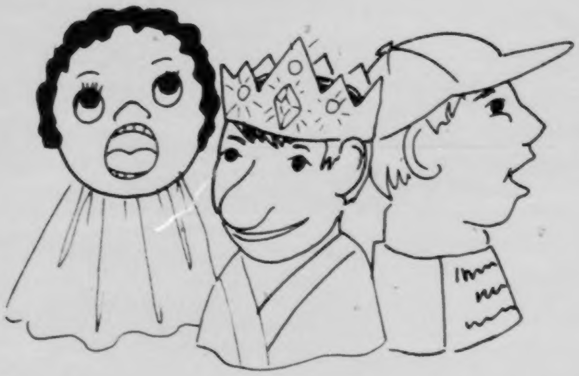


3. Cover head and base with pulp or with layers of newspaper strips dipped in paste.



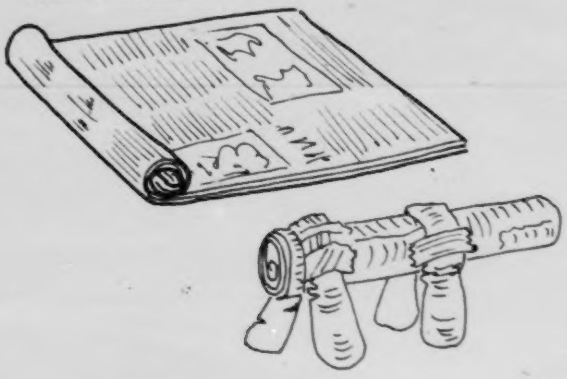
4. Shape nose, brows, cheeks, ears, and other features from pulp, folded newspaper, or cardboard. Cover with layers of strips.

5. If desired, make hair, hats, collar, and scarf for neck.

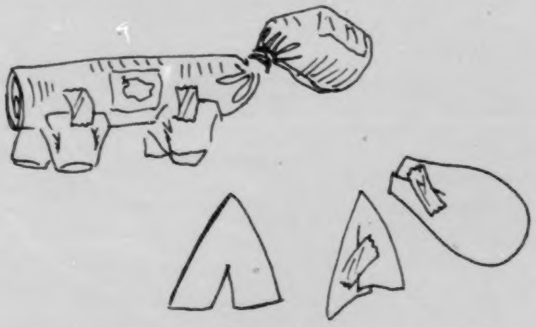


Animals

1. For the base, use a cardboard tube or sheet. Or, roll up folded newspaper. Tape to hold it securely.

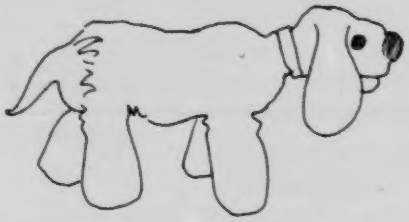


2. Use rolls of newspaper for legs, flattened where attached to body and rounded elsewhere. Bind with tape. For stubby legs, tape egg carton cups to body.



3. Roll a piece of newspaper for neck and head. Insert into body, if possible. Bind with tape to hold the shape.

4. Shape paper pulp or small pieces of cardboard or folded newspaper to form details such as ears.



5. Cover base with paper mache pulp or layers of strips. Smooth and add filling to shape the animal.

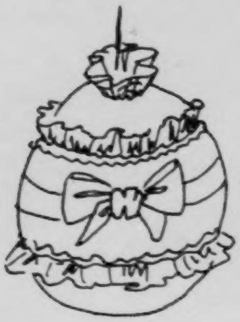
6. Dry.

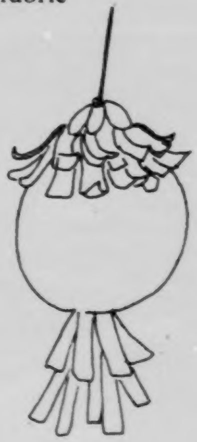
7. Paint.

Magic Starchies

Starchies are ideal for Easter eggs, Christmas ornaments, fruit, pinatas, or party decorations.

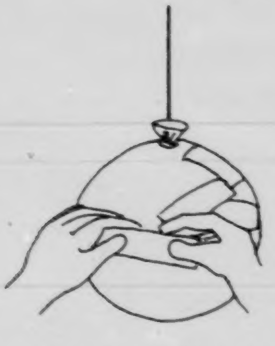
Materials:
- colored tissue paper or fabric
- balloons
- string





Directions:

1. Mix 1 cup powdered starch and 3 cups cold water in a saucepan. Stir over low heat with wooden spoon until mixture is sticky.
2. Blow up balloons and tie tightly with string.
3. Cut fabric or tissue paper into strips.
4. Rub starch over the balloon.
5. Dip each strip of fabric or paper into the starch, one piece at a time (pulled through fingers to take off excess starch). See example.

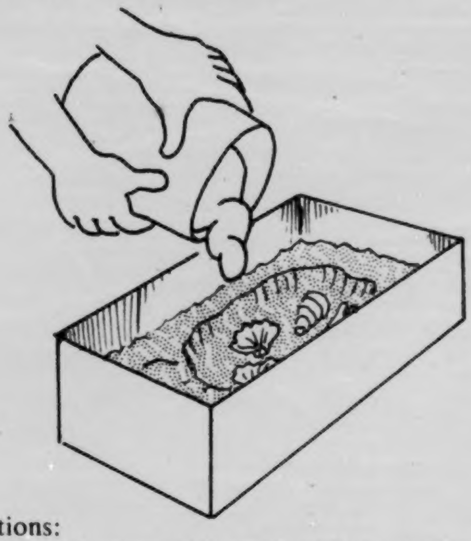


6. Wrap each piece of fabric around balloon and smooth with hands. (Overlap fabric so there are no holes.)
7. Hang with clothespin to dry overnight.
8. The next day, puncture balloon with pin.
9. Decorate with paint or fringed strips of paper.

Sand Casting With Plaster of Paris

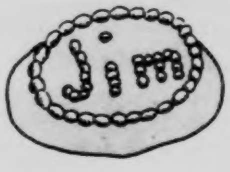
Materials:

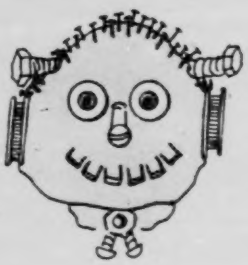
Use items children have collected from a field trip, vacation, or yard, such as shells, pebbles, pine cone pieces, and marbles.



Directions:

1. Fill a shoebox with sand. Make a shallow hole and sprinkle it with water.
2. Put objects in scooped area, pretty side down. Make sure objects are free of sand on top side so plaster will stick.
3. To mix the plaster, sift it into an amount of water equal to the desired amount of plaster. Sift until plaster stands in a peak at center of container. Always add plaster to water; never pour water into dry plaster. Stir with hand or spoon. Plaster will become warm as it hardens. This is a warning to work quickly. Plaster of paris mixed to the consistency of sour cream hardens quickly.
4. Pour plaster over the arrangement.
5. For hanging later, press a wire loop into the wet plaster.
6. When plaster hardens, remove cast from sand. Brush off excess sand. Use for wall hangings, paper weights, etc.





8. Woodwork

Wood can be fun to work with. It feels and smells pleasant. Sawdust, wood chips, and shavings can be used creatively. Sawing, hammering, boring holes, sanding, planing, filing, scraping — all interest children. School-agers can plan and make extra equipment for the center. They can make things by combining wood scraps that are functional and decorative. Younger children get satisfaction just from handling tools.

The teacher with little experience in this area should do some homework. Expertise is not necessary, but it is important to have a basic knowledge of wood, tools, and accessories for woodworking. Check beginner books on carpentry, poke around in a hardware store, watch carpenters work.

Materials to Begin Woodworking

* at least 2 bent-claw hammers with drop-forged heads, approximately 11-13 ounces each, adult quality and child size

* at least 3 dozen size-30 and size-20 common galvanized nails, to use on a pounding board

* roofing and size-4 common nails to begin construction

* a large thick board into which the children can pound large nails and learn to hammer

* a firm, steady work surface, such as a work bench, sawhorse, table, or box — one that's at a workable height for the school-agers

* at least two 2½-inch C-clamps, or vices if possible (attached to the edge of the work surface)

* at least two 12- to 16-inch cross-cut saws made of good steel with 8 or 10 teeth per inch

* scraps of soft wood of varying shapes, lengths, thicknesses, and grains from the lumber yard's waste bin, a cabinet maker, construction or wrecking sites (check for softness with fingernail)

* wood for later use such as square and round doweling, quarter round, cross sections of tree limbs with bark, wood with knot holes, a few pieces of hardwood

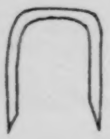
Soft and Hard Wood

Use soft wood for children's woodworking. White or yellow pine, balsa wood, and poplar are soft and inexpensive.

Keep pieces of hard wood and knotholes in a box labelled "Materials for Gluing," if the wood is too hard or too small to hammer or saw.

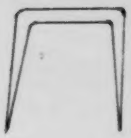
Nails

Check with a hardware store or lumber yard about the variety of nails available. Ask for suggestions about kinds of nails for children to use. Discuss and handle various kinds with the children. Call nails by their names when describing them.

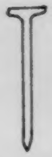


Poultry Wire
Staple

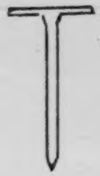
Finishing Nail



Cable Staple



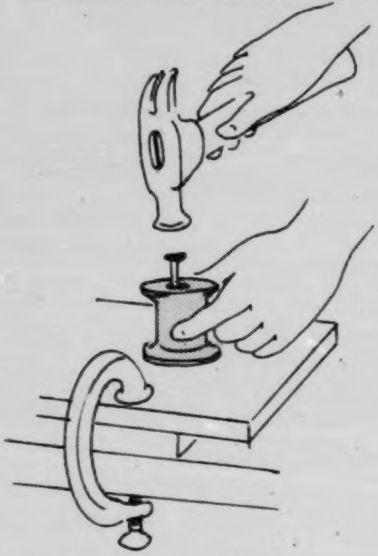
Common Nail

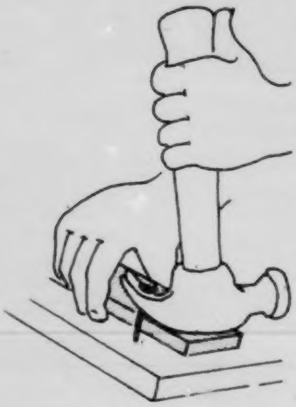


Roofing Nail

Practicing:

Hold a nail in position and give a gentle tap. Move fingers and hit more forcefully. Use spools and special nail holders to hold nails and protect fingers while hammering.





Teach the children to remove nails. Slip a piece of wood under the hammer head and pull.

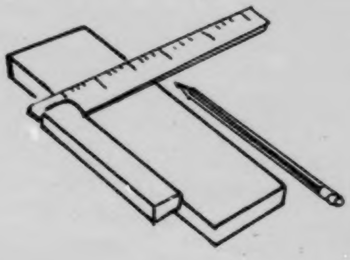
Saws

After the children have hammered nails and made simple objects, and once safety rules are followed automatically, begin working with saws.

Saws should be sharp and in good condition. Remove any rust with lightweight machine oil. Check handles to be sure they're firmly attached.

Directions for Using Saws:

1. Use ruler or carpenter's square and pencil so children can mark where they want to saw.



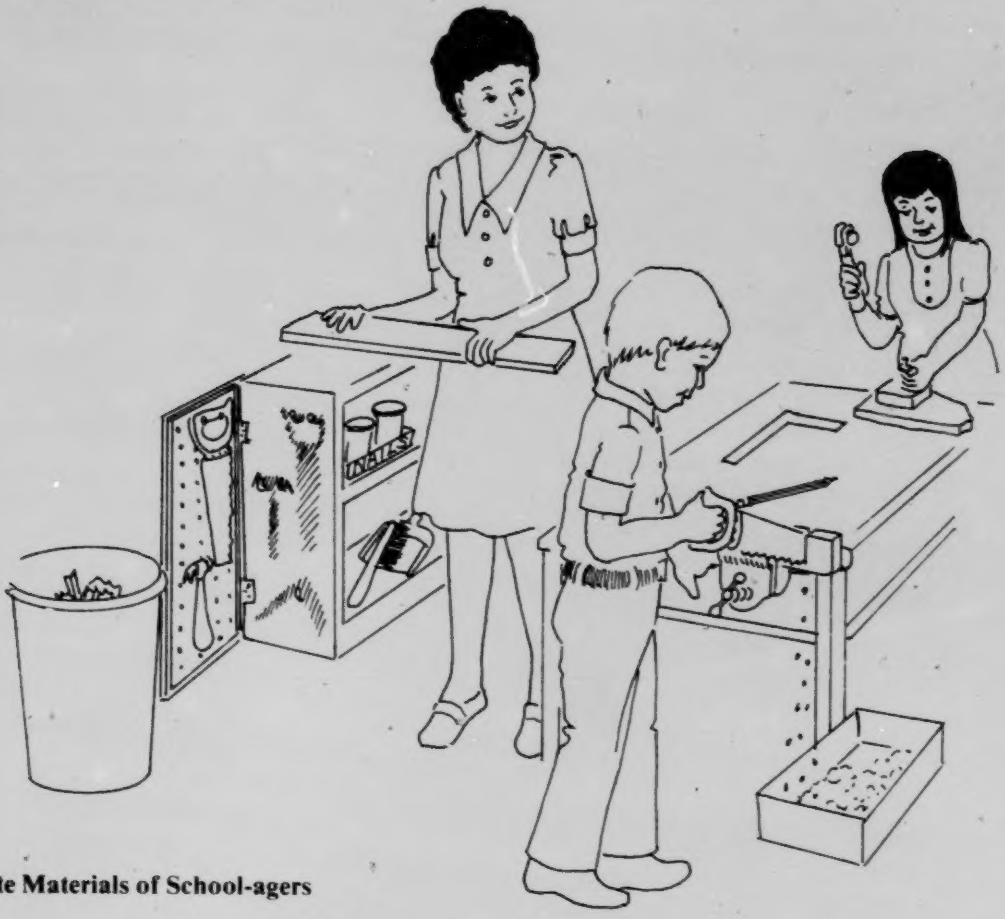
2. Place wood in clamp with the place to be sawed as near to the clamp as possible. Another way of holding the wood is to nail it to something. The tighter the wood is held, the easier the sawing.
3. Keep both hands on the handle or lean on one hand for balance.
4. Slowly pull the saw at an angle, two or three times or until there's a groove.
5. Saw with a steady rhythm and light pressure.
6. When the sawing is nearly complete, ease up to avoid splintering.
7. Rub soap on the saw to make the sawing easier.

Materials For More Complicated Construction

(See section 8 for pictures of tools.)

- hand drill with several size bits
- coping saw with extra blades
- cutting pliers
- carpenter's square, yardstick, ruler
- screwdriver
- screws, wood and metal, washers, bolts
- awl
- plastic wood in small cans or tubes (useful for filling cracks in wood because it's waterproof, can be sanded, and won't crack under paint)

- different sizes of sandpaper
- white glue for gluing accessories that can't be nailed
- paint, varnish, paint remover



Favorite Materials of School-agers

These are appealing to children because they are realistic and attractive, as well as useful.

- bark
- spools
- pipe cleaners
- buttons, washers
- fabrics, leather, rubber
- string, cord, yarn, ribbon
- small pieces of roof shingles
- pine cones, sea shells, seeds
- rubber bands
- hardware such as hooks, eyes, knobs, hinges, casters
- paint stirrers
- dowels in various sizes
- jar lids, bottle caps, checkers with holes to be used for wheels

Safety Remainders

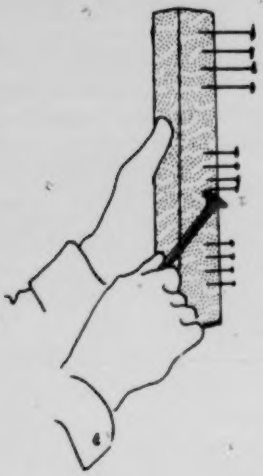
- Plan safety rules with the children. Post them where the children can see them.
- Pick up dropped nails. Keep a magnet handy so that spilled nails or nails mixed with sawdust can be picked up quickly and safely.
- Carry tools with sharp surfaces pointing down. When finished with them, return tools to storage, preferably hanging them at a marked spot.
- Provide safety goggles if possible, particularly while sawing and hammering. Adjust goggles to fit properly.
- Teach safety by example.
- Keep a waste basket near. Hang a dust pan and broom where the children can reach them.

More Suggestions

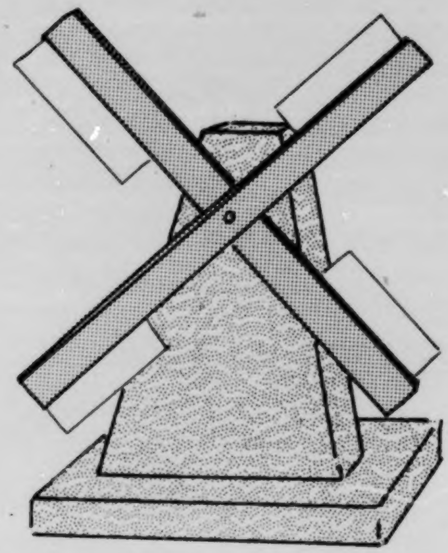
* Try to find wood with different odors, textures, and colors.
* Display drift wood, roots, twisted branches, and petrified wood. (See the section on weathered wood.)
* Learn about wood native to the area.
* Exhibit sawed and chopped wood, lengthwise and crosswise pieces.
* Collect sawdust, wood chips, and shavings, and think of different ways to use them (garden, collage, guinea pig's cage).
* Don't hurry — start when there's ample time.
* As always, give encouragement.

Creative Carpentry

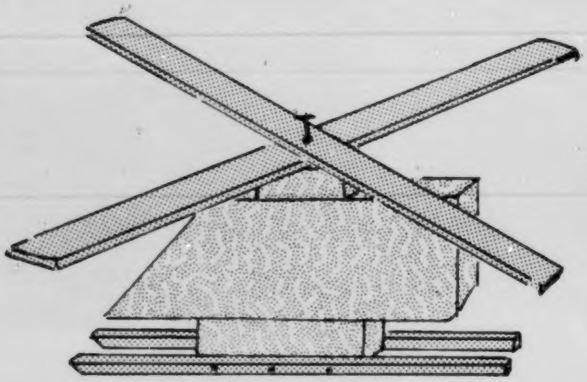
If a variety of shapes and sizes of wood and accessories are available, and if they have a place to work and good tools, children will be very creative in their constructions. They'll produce buildings, helicopters, airplanes, windmills, dams, and things impossible to predict.



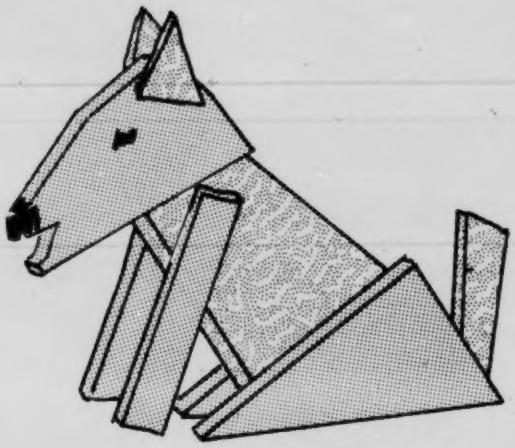
Nail-Scraper
Xylophone



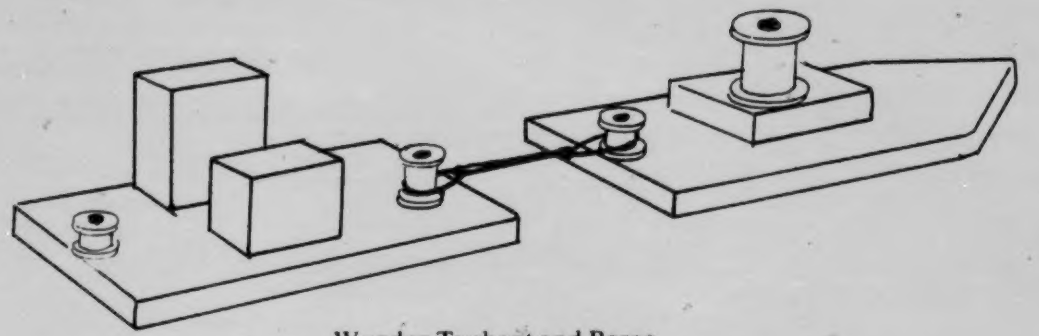
Windmill



Helicopter



Animal



Wooden Tugboat and Barge

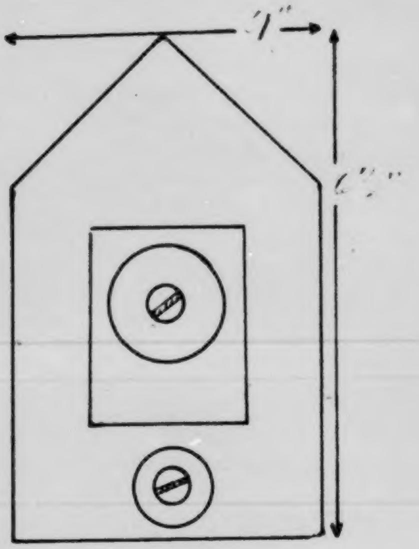
Materials:

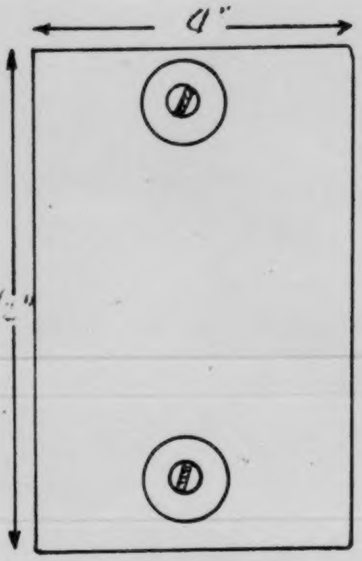
Tugboat

- wood base, ½ inch by 4 inches by 6½ inches
- wood cabin, 1 inch by 2½ inches by 2½ inches
- large spool or bead for smokestack
- small spool for post
- screws, washers, nails, glue, sandpaper, paint or varnish

Barge

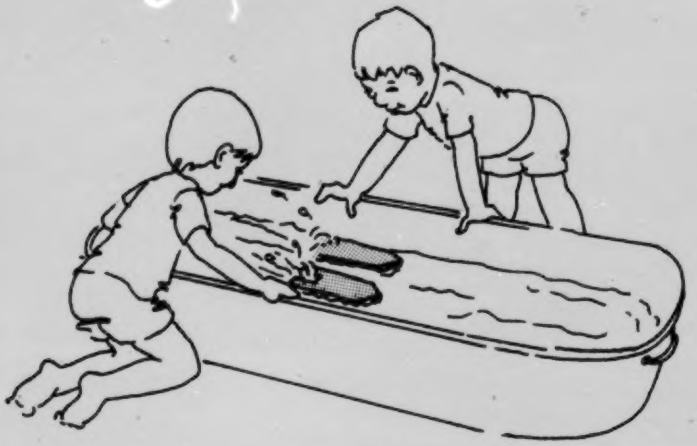
- wood base, ½ inch by 4 inches by 6½ inches
- 2 small spools for posts
- string for tow line
- screws, washers





Directions:

Nail and glue cabin to base of tug. Secure spools with screws and washers. Round corners and smooth rough edges with sandpaper. Finish with varnish or non-leaded enamel. Vary the size of the tugboat and barge depending on the scraps of wood available. (The tug can pull more than one barge.)



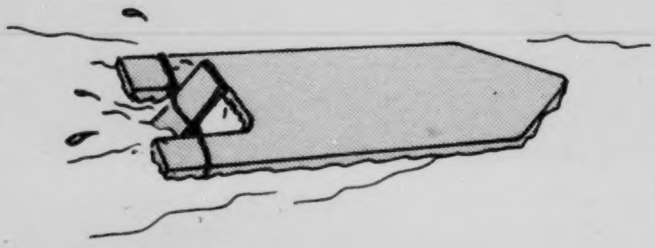
Paddle Boat

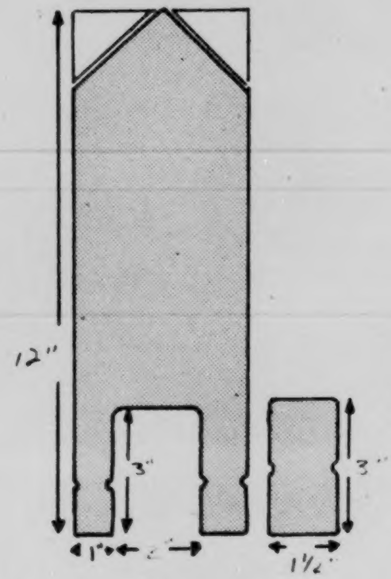
Materials:

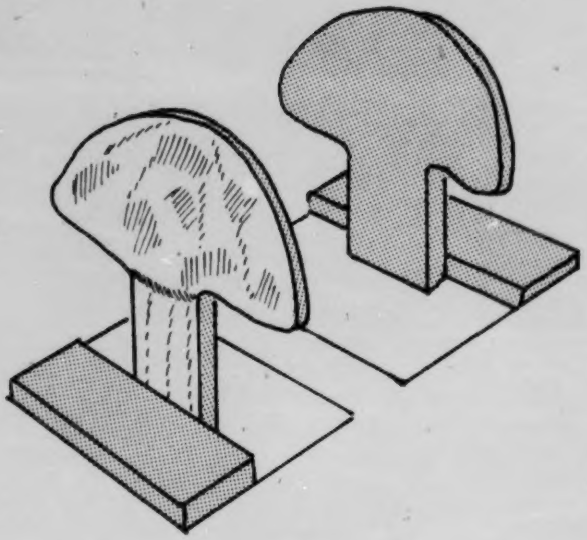
- ½ inch thick board
- large rubber band
- board, 12 inches by 4 inches by ½ inch
- piece of wood, 3 inches by 1½ inches by ¾ inch

Directions:

1. Make boat the size desired. Try 12 inches by 4 inches by ½ inch thick.
2. Draw design of boat on wood and cut with a coping saw.
3. Cut rectangular opening in rear, 3 inches deep and 2 inches wide.
4. Cut paddle wheel 3 inches long and 1½ inches wide.
5. Cut shallow grooves across center of paddle wheel on both sides to hold the rubber band.
6. Cut grooves on sides of boat 1¾ inches from the rear.
7. Place the rubber band in the grooves across the rear of the boat.
8. Insert the paddle wheel and wind it backwards.
9. Put boat in water and release the paddle wheel. Watch it go.



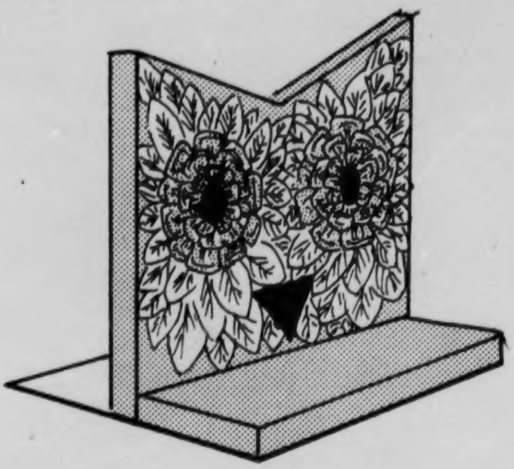




Mushroom Bookends

Owl Bookends

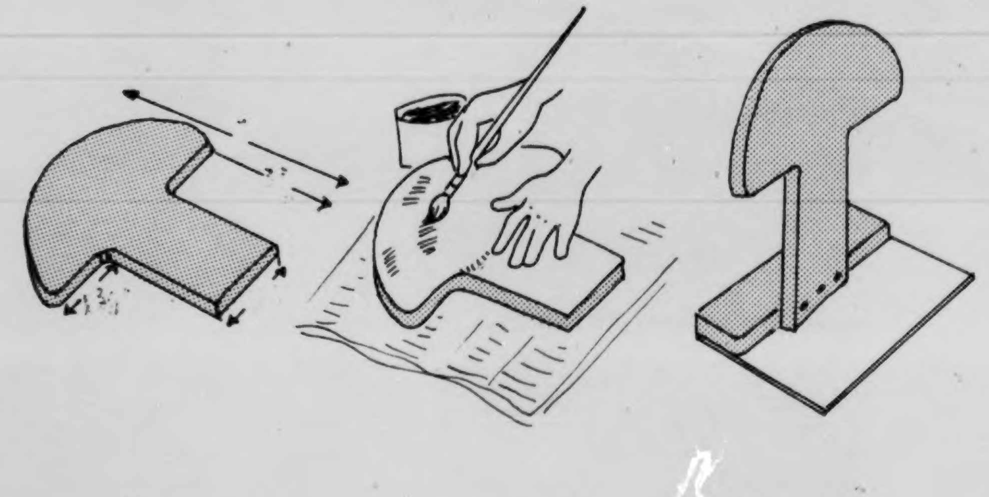
Decorate with pine cone segments, bark, and feathers.

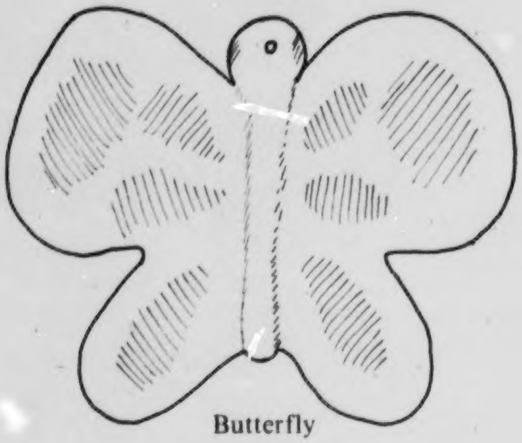


Materials:
- 2 pieces of wood for base, 6 inches by 2 inches
- 2 pieces of wood for uprights, 6 inches by 7 inches
- pencil
- jigsaw or coping saw
- glue, nails, sandpaper, cardboard

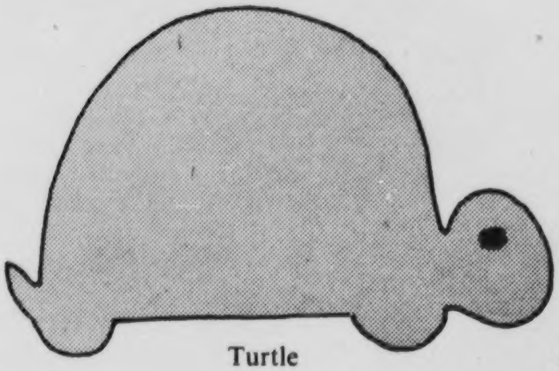
Directions:

1. Draw pattern on wood and cut with jigsaw or coping saw.
2. Sand before painting or varnishing.
3. Glue and nail the 2 pieces together at right angles.
4. Glue cardboard to bottom, as shown, so it will extend under books.





Butterfly



Turtle

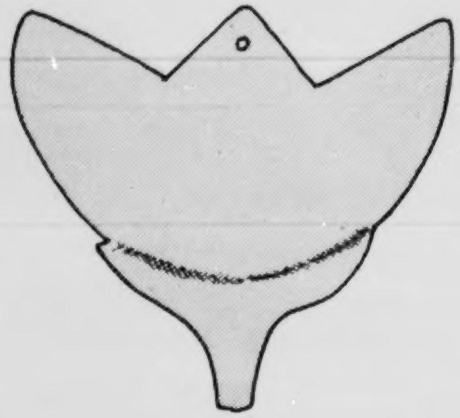
Cutting Boards

Materials:
- leather or plastic strip
- enamel
- vegetable oil
- jigsaw
- plywood, 12 inches square, ½ inch thick
- enamel

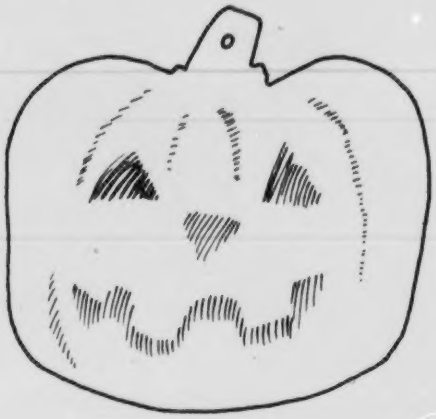
Directions:

1. Cut out design with jigsaw.
2. Drill hole in top and insert leather or plastic strip for hanging.
3. If desired, use enamel on the decorated side.
4. Rub cutting side with vegetable oil and wipe off excess.

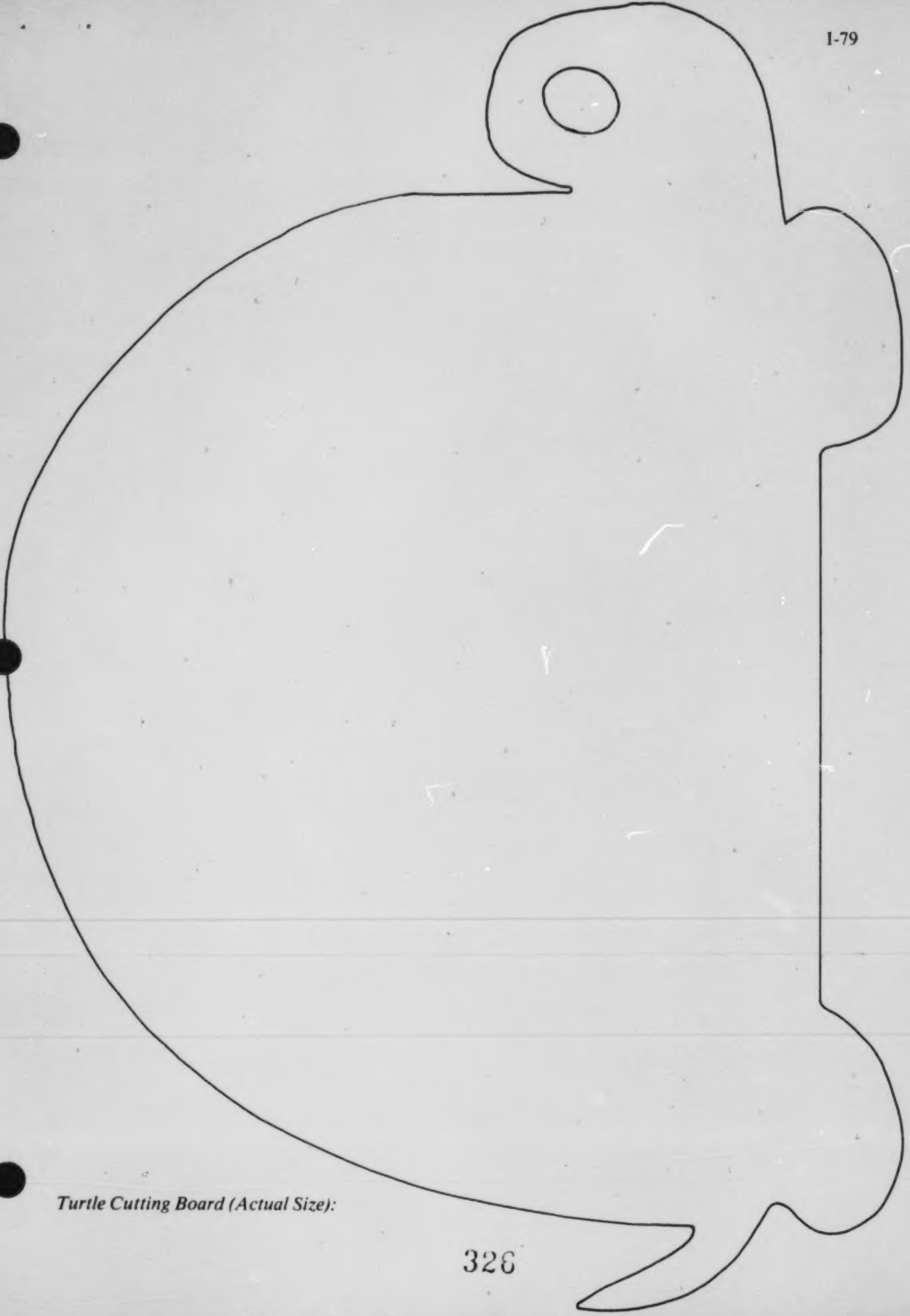
A cutting board makes a great hand-made gift for Mother's Day. Smaller boards may be used as cheese boards.



Tulip



Jack-O-Lantern



Turtle Cutting Board (Actual Size):

Weathered Wood and Driftwood

Weathered wood is a dried, natural plant material that has been subjected to wind, rain, sun, or fire. Driftwood is weathered wood usually weathered by water and found by the sea.

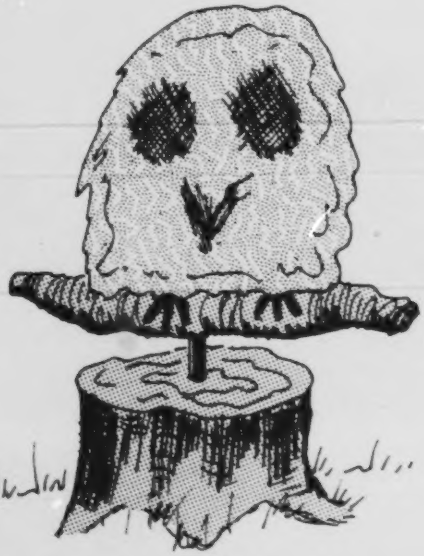
A single piece of weathered wood can serve as a decoration, be the base on which a wire design is placed, the top of a mobile, or part of a statue. Each piece is unique. Weathered wood is free and can be combined beautifully with other low cost craft materials. Finding and using it can stimulate the imagination and be satisfying. And consider: where did it come from, was it part of a covered wagon, a tall tree used by early settlers as a lookout, or the first peach tree grown in Texas? Did it come from a shipwreck or a faraway country?

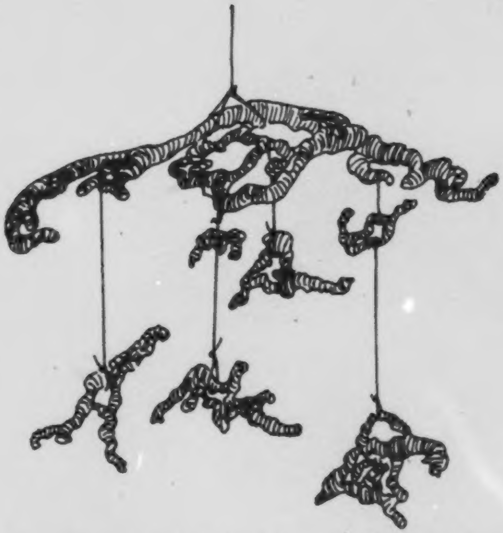
Some school-agers may have been influenced by those who consider items such as weathered wood trash rather than treasure. If so, talking about weathered wood is not enough. Adults must demonstrate its possibilities with enthusiasm and imagination.

Finding Weathered Wood

Look along dry river beds, in woods, on the beach, under the shrubs outside the day care yard, under the steps at home, in the ditch down the street. A small dead branch may be lodged in a tree.

When searching on the ground among other items, teach the children to use sticks to move objects to be safe from stinging ants and scorpions.





Take these items on nature walks: at least one long and sturdy stick, a small saw and hammer to cut wood, plastic or newspaper for wrapping dirty items, and a carrying device such as the harvester's sack described in the section called "Nature Walks."

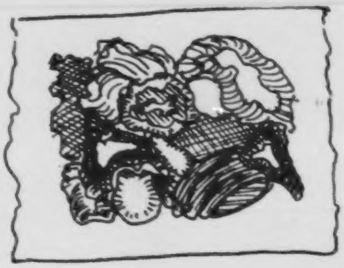
Preparing Weathered Wood

If the wood is dirty, clean it with detergent and water. Scrub with a hard brush if necessary and use an ice pick, awl, or big nail to clean in cracks. Use a wire brush to rub away rotten areas.

Bleach wood by dipping it in a solution of laundry bleach. It may be tinted in a dye solution, but first enjoy its natural appearance.

If the wood is wet, spread it out to permit air circulation and prevent mildew. Prop up or hang larger pieces. Allow it to dry slowly and turn it frequently.

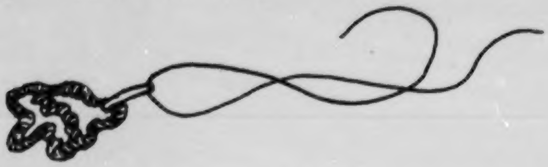
Sand it or carve it. Paint it or wax it. Draw on it. Fasten pieces together with glue. Use epoxy glue if it's to be placed outside.



Other Suggestions

Use large flat pieces as background for mounting small weathered pieces. Use small pieces to make jewelry, perhaps combined with other craft materials.

Pieces may be put together to make a table top, placed on the wall as a hanging rack, or used as a mailbox stand.

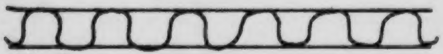


Corrugated Cardboard

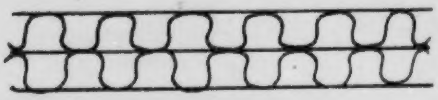
Corrugated cardboard consists of a top and bottom layer of heavy paper glued to a corrugated middle layer. (This middle layer is often called the "corrugated curves layer.") There is single- and double-wall cardboard. Most give-away boxes are single-wall. Double-wall cardboard can be purchased in large sheets and made into large equipment. See Bruce Palmer's book, *Making Children's Furniture and Play Structures,* for more information.

The school-ager can use single-wall corrugated cardboard to make free useful and artistic creations. Most suggestions in other "how-to-do-it" sections of this guide are for making things from whole cardboard boxes rather than from box pieces as discussed here.

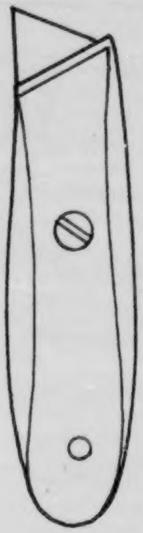
Materials:
- flat corrugated cardboard (from box or other source)
- knife or blade in safe holder
- ruler with metal edge
- heavy scissors or tin snips
- glue
- large nail for making holes in cardboard if lacing is to be done
- sticks or dowels (match-stick size) for any moving parts
- device for creasing cardboard (something firm and strong, with a tapering, rounded end)



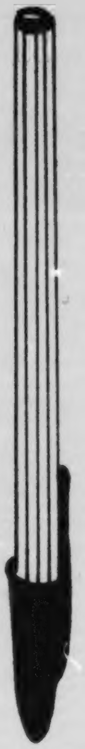
Single



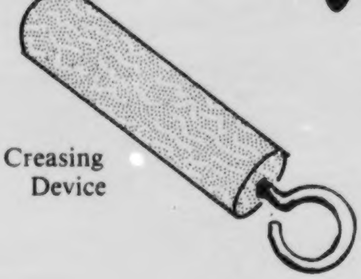
Double



Knife



Rounded End for Creasing

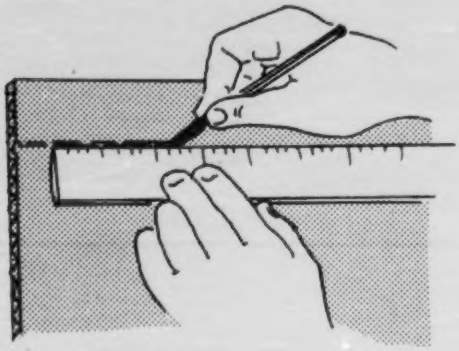


Creasing Device

Note: Young children need supervision or help when handling a blade. They could outline designs or give dimensions to an adult and let the adult do the cutting.

To cut:

1. Measure the size of pieces or strips needed.
2. Firmly place and hold the ruler where a cut is to be made.



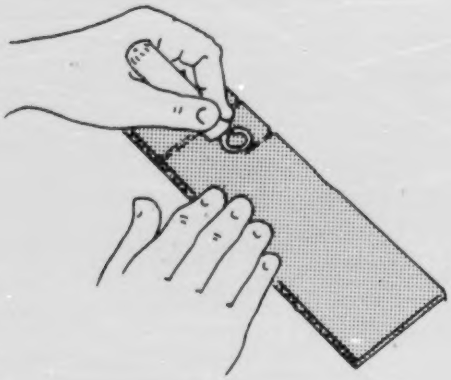
3. Mark with the creasing device.
4. With the ruler in place, cut with the knife or lift and cut along the crease with scissors.
5. Cut or fold *across* the corrugated cardboard waves.

To fold:

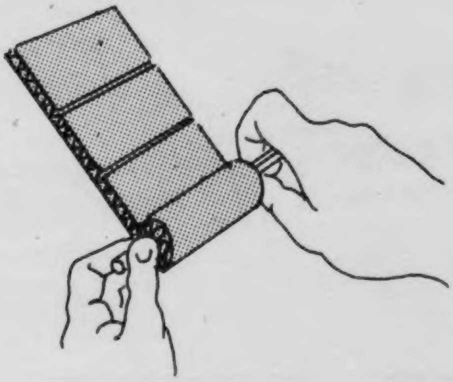
Use the ruler and creasing device as shown under directions for cutting. Crease along the corrugations or diagonally.

To make curves or rolls:

Use the ruler and creasing device as shown.

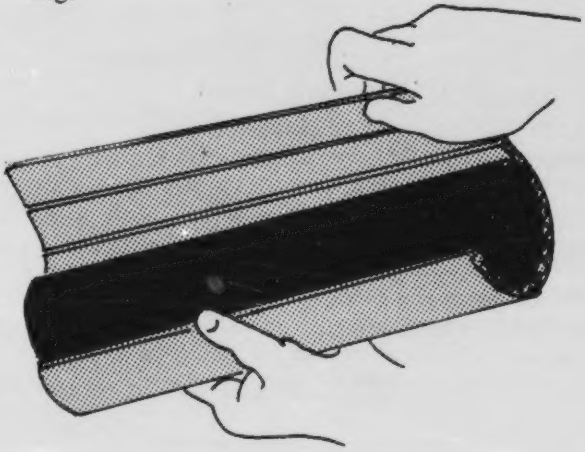


Crease along the corrugations. Gently cut through the upper layer at 1-inch intervals. Roll around a pencil if desired.

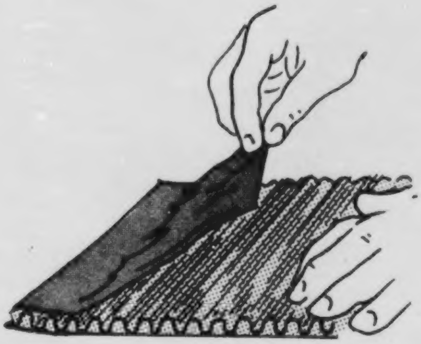


To strengthen and thicken strips:

Glue 2 or more strips together. To curve, score each layer at 1-inch intervals before gluing.



To uncover the corrugated curves:

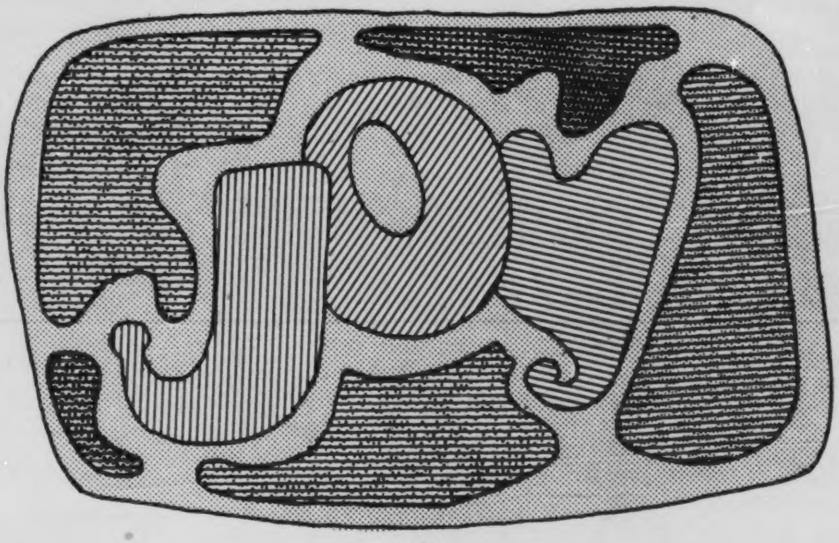


Slightly moisten the side of the cardboard with printing. Peel paper layer off one side, uncovering the corrugated middle layer. Fold as desired.

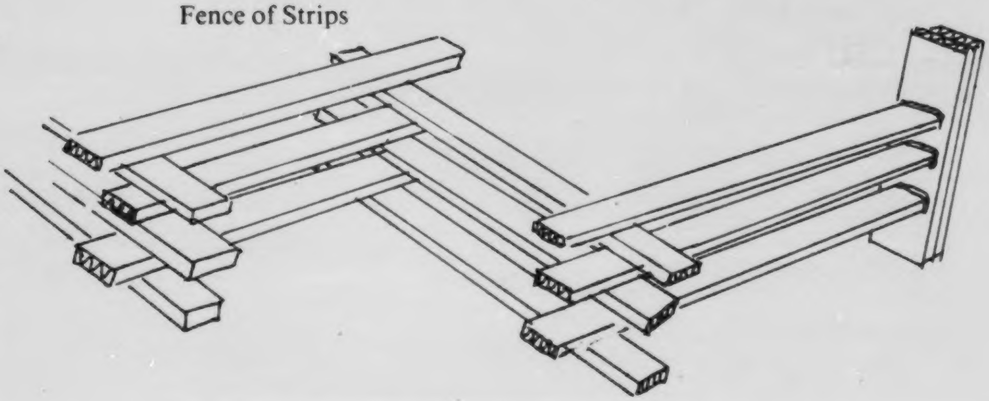
Cardboard Strips and Pieces

Graffito

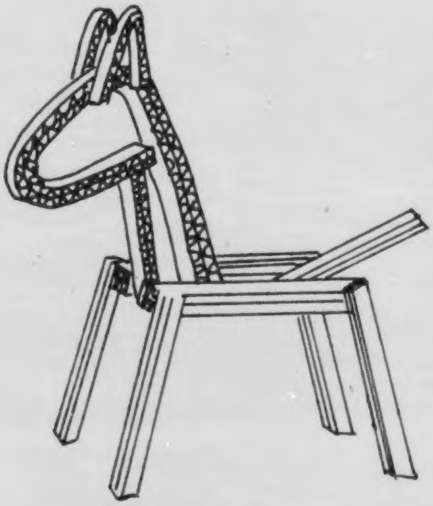
The school-ager may make any design desired.



Fence of Strips



Cut triple layer cardboard in 6-inch strips. Dove-tail where strips join so the fence will stand up.



Deer or Dog

Make design first and glue to a background. Then try making it dimensional as shown. Glue 2 strips together to make sturdier animal. Fashion the body, then the head and neck.

9. Recipes for Arts and Crafts

With guidance, school-agers themselves can prepare art materials for use. They can work with intensity of color, texture, and volume. They can draw and mount a favorite recipe on the wall — maybe a chart in a frame.

Finger Paints

Finger Paint 1

Materials:
- ½ cup powdered starch
- ½ cup soap flakes
- 1-1/3 cups boiling water
- colors of tempra paint
- container for each color of finger paint

Directions:
Mix starch with enough cold water to make a smooth paste. Add boiling water. Cook until glossy. Stir in dried soap flakes while mixture is warm. Put in container. Add tempra paint.

Finger Paint 2

Materials:
- ½ cup powdered starch dissolved in 3/4 cup water
- 1 envelope gelatin dissolved in 1/4 cup cold water
- 1/2 cup soap flakes
- 2 cups boiling water
- colors of tempra paint
- container for each color of finger paint

Directions:
Add boiling water to starch mixture. Cook until boiling. Stir. Add gelatin and soap flakes. Add tempra paint.

Finger Paint 3

Materials:

- 1 cup liquid starch
- ½ cup soap chips
- 6 cups water
- colors of tempra paint
- container for each color of tempra paint

Directions:
Dissolve the soap chips in water, then mix well with the starch. Add tempra paints.

Cornstarch Finger Paint

Materials:
- 1/2 cup cornstarch
- 1 quart boiling water
- colors of tempra paint
- container for each color of tempra paint

Directions:

Dissolve the starch in a small amount of cold water. Gradually add the hot water. Cook until clear. Add tempra paint.

General Information About Finger Paint

1. To slow the drying, add 2 teaspoons of glycerine to cooled finger paint. A few drops of oil of cloves or oil of wintergreen will keep the paint fresh.
2. Stir after adding tempra paint, then cover container.
3. Use special finger-paint paper or other thick paper. Wet the paper and place it on work space, glazed side up.

Play Dough

Play dough is a clay-like, colorful flour and salt mixture. It has most of the qualities of clay and is used in many of the same ways. Play dough is not as sticky as clay and does not mold as well. But play dough is easier to use and is less messy.

Uncooked Play Dough

Materials:
- 2 cups flour
- 1 cup salt
- 1 teaspoon tempra paint
- 3/4 cup water
- a few drops of salad oil

Mix flour and salt, add color, then gradually add water to form dough. Store dough in a plastic bag. Use it like clay. Harden it in a 250-degree oven for 3 hours or more depending on thickness.

Cooked Play Dough

Materials:
- 2 cups flour
- 1 cup salt
- 2 cups water
- 2 tablespoons oil
- 4 teaspoons cream of tartar
- food coloring

Directions:
Cook about 5 minutes over medium heat until dough pulls away from sides of pan. Knead it to make a soft, rubbery texture.

Materials For Modeling

Sawdust Dough

Materials:
- wallpaper paste
- water
- sawdust

Directions:
1. Mix small batch of wallpaper paste.
2. Slowly add sawdust and mix with hands until mixture sticks in a ball.
3. Shape into vases, turtles, whatever the children want.
4. Paint after it dries if desired.

Sawdust Dough 2

Materials:
- 2 cups sawdust
- 1 cup plaster of paris
- ½ cup powdered wheat paste
- 2 cups water

Directions:
Combine without water. Then add water gradually until mixture can be molded. Excellent for masks, puppet heads, fruits, vegetables, figures.

Sawdust Sculpture

Materials:
- 1 cup flour
- 3 cups water
- 2 tablespoons alum
- 10 cups sawdust

Directions:
Cook flour, water, and alum until clear. Add sawdust. Model figures or beads. Paint when dry if desired.

More Suggestions for Sawdust Dough

- Add a teaspoon of glue to sawdust dough recipes to increase their adhesive quality when attached to wood.
- If sawdust contains sticky or foreign matter, sift it through a piece of 1/4-inch mesh screen.
- If dough is to be hung, put in strings or wires for hanging while dough is being molded.

Map Dough

Materials:
2 cups of flour and 2 cups of salt

Directions:
Mix flour and salt. Add enough water for a creamy consistency. Add powder paint or other coloring, or paint map after it is dry. Excellent for elevations on flat surfaces (i.e., mountains). Allow each layer to dry before adding another.

Cornstarch Dough

Materials:
- ½ cup salt (for sparkle, use ice cream salt)
- ¼ cup cornstarch
- ¼ cup water

Directions:
Mix ingredients and cook over low heat, stirring until mixture stiffens into a lump. Color with food dyes if desired. Model when cool enough to handle.

Salt and Flour Ceramics

Materials:
- 1 cup salt
- 1 cup flour
- 1 tablespoon powdered alum
- mixing bowl
- food coloring or dry tempra if color is wanted

Directions:
1. Mix cup of salt, cup of flour, and a tablespoon of powdered alum. Add water for a con-

sistency of putty. Add color if desired. Model pinch-pots, animals, and figures.

2. After the pieces have dried and hardened, shellac them for permanence.

Paste

Regular Paste

Materials:
- ½ cup flour
- ½ cup sugar
- 2 cups hot water

Directions:

Mix flour and sugar. Add hot water and stir. Cook until thick, then cool. Store in a covered plastic container in the refrigerator. Make fairly thick for regular pasting. Thin it so children can smear it on paper. Make it very thin and add paint to make finger paint.

Cornstarch Paste

Materials:
- 2 tablespoons cornstarch and water

Directions:

Add enough cold water to make a smooth paste. Add boiling water until the mixture turns clear. Cook until it thickens, then remove from heat. The paste becomes thicker as it cools. It may be thinned with water.

Adhesive Paste or Protective Wash

Use half glue and half paste.

Bookmaker's Paste

Materials:
- 2 teaspoons flour
- 4 teaspoons cornstarch
- 1 teaspoon powdered alum
- 6 ounces water

Directions:

Mix flour, cornstarch, and alum. Add the water slowly, stirring until smooth. Cook over low flame. Stir constantly until paste is thick. Keep in air-tight jars. Thin with water if necessary.

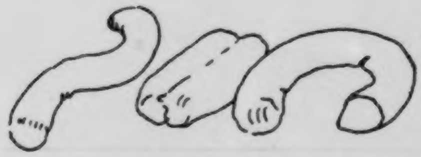
Crayons

Save pieces to make new crayons.

Odd-Shaped Crayons

Materials:

small broken crayons



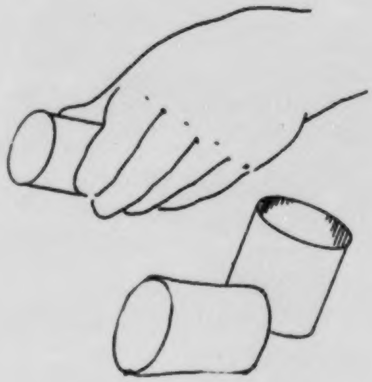
Directions:

Lay crayon pieces close together on foil. Warm them. Use a tooghpick to push the crayons into odd shapes. Cool.

Giant Crayons

Materials:

small broken crayons



Directions:

Melt paraffin with several pieces of crayon in a clean disposable can. Place can into a pan of water over heat. Never put can directly over stove burner. An electric fry pan with an inch or 2 of water works well because the heat is easy to regulate.

Pour the melted wax misture into pill bottles, bouillon cube cans, whole egg shells, or other small containers. When the paraffin is cool, peel off or cut away the container.

School age children may want to make crayons for younger children.

Bubbles

Materials:

- ¼ cup glycerine
- ½ cup water
- 1 tablespoon liquid detergent

Directions:

Mix in jar. School-agers can use bubble pipes, reeds, or straws to blow big, shiny bubbles. Fun outdoors, but will not stain furniture or clothing.

10. Materials, Tools, and Supplies

Many free or inexpensive materials can be collected for use in day care.

One way to collect useful items is to advertise in churches, schools, and community centers. Post list of needed items where lots of people will see them. Check at garage sales for woodworking tools, furniture, or other equipment. The children can help.

Natural Materials

- shells
- seeds
- leaves
- feathers
- driftwood
- rocks

Man-Made Materials

- cardboard boxes
- computer paper and cards
- spools
- bottles
- cans
- 3-gallon ice cream cartons
- fabric scraps and trims
- kitchen cartons in various sizes
- egg cartons
- styrofoam meat trays
- plastic berry baskets
- brown paper grocery sacks
- wood scraps
- plastic bottles of all sizes (chlorox, detergent bottles)
- used tires
- magazines and catalogues
- baby-food jars
- newspapers
- aluminum pie plates
- buttons
- cardboard tubes
- corks
- styrofoam packing
- film containers
- coat hangers
- wire
- toothbrushes
- calendars

Materials From Churches, Schools, Parents

- cooking utensils
- pots and pans
- wooden spoons
- clothespins
- spools and buttons
- scissors
- utensil boxes and trays
- men's old shirts to use for smocks
- trading stamps
- fabric scraps for rags or collages
- egg beaters
- anything being thrown away (cookie cutters, rolling pins, etc.)

Scrounge List

Many materials suitable for day care are free at places such as those listed below. Most are from *A Useful List Of Classroom Items,* prepared at The Education Development Center, Boston.

Contractors and Building Supply Companies: lumber, pipes and wire, wallpaper, linoleum, tiles, molding wood, sawdust, wood curls, scraps from construction sites.

Plastics Companies: trimming, cutting, tubing, scrap plastic and plexiglass, mesh.

Electronics Manufacturers: styrofoam packing, printed circuit boards, discarded components.

Lumber Supply Companies and Furniture Factories: scrap wood, damaged bricks, concrete blocks, doweling, sawdust, wood curls, wood scraps for carving.

Hardware Stores: sample hardware books, sample tile charts, linoleum samples.

Rug Companies: sample swatches, end pieces from rugs, cardboard tubes.

Supermarkets and Outdoor Markets: cartons, packing materials, fruit crates, large cardboards and materials from displays, discarded display racks, styrofoam fruit trays.

Department Stores: fabric swatches (drapery and upholstery samples), rug swatches, corrugated packing cardboard, sample food cans and boxes, packing materials, packing boxes from appliances such as washing machines and refrigerators.

Decorating Firm: outdated wallpaper books.

Phone Company (Public Relations Department): scraps of colored wires, telephones on loan.

Electric Power Company (Public Relations Department): telephone poles, wooden cross arms, steel ground rods, wire, large spools that can be used for tables, assorted packing materials.

Garment Factories and Button Manufacturers: yarn, scraps, decorative tape, buttons, spools, scraps, decorative tape.

Camera Manufacturers and Photographers: camera on loan, film spools, cartons.

Leather Manufacturers and Leather Craft Companies; Pocketbook, Belt, and Shoe Manufacturers: scrap pieces of leather and lacings.

Billboard Companies: pieces of billboard to use as posters and wall coverings.

Ice-Cream Stores: 3-gallon ice cream containers.

Airlines: plastic cups.

Container Companies: large cardboard sheets.

Architectural Firms, Upholsterers, Textile Companies, Floor Covering Firms, Kitchen Counter and Cabinet Makers, Wallpaper and Paint Stores: color samples, wood, linoleum and tile samples, formica squares, wallpaper books, scraps of all sizes.

Bottling Firms: bottle caps, large cardboard tubes, beverage holders.

Window, Storm Door, and Siding Companies; Soft Drink Manufacturers: aluminum scraps.

Cleaners and Tailors: buttons, hangers, scrap material.

Restaurants and School Cafeterias: ice cream containers and spoons, corks, boxes, cartons, large glass and plastic jars, gallon cans.

Large Food, Candy, and Soap Manufacturers: sample cans and boxes.

Plumbers and Plumbing Supply Companies: wires, pipes, tile scraps, linoleum.

Tile and Ceramic Companies: scraps of ceramic and mosaic tile, tile by the pound (inexpensive).

Paper Companies: paper free in the form of samples, end cuts, or damaged sheets; paper delivered to paper companies in large cardboard tubes which usually are discarded and make good chairs and tables.

Metal Spinning Companies: shavings and scrap pieces.

Junk Yard and Scrap Metal Yards: wheels of all shapes and sizes; gears and moving parts from clocks, radios, fans, cars, irons, and toasters; handles from doors and cars; knobs; broomsticks; hinges and fittings.

Note: Depending on the nature of a factory or business, they will have packing materials of all shapes and sizes.

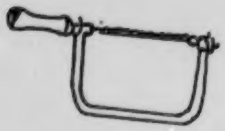
Tools to Purchase

- hand saw
- coping saw
- hammer
- cutting pliers
- hand drill
- awl or ice pick
- paper hole punchers
- x-acto knife
- jack knife
- mat knife
- scissors
- C-clamps
- screwdriver
- nails
- screws
- metal file
- vise
- glass cutter
- tin snips
- small wood plane
- soldering iron
- stapler

It is important that school-agers know the names of their tools. Consider mounting the following pictures near the children's tools.

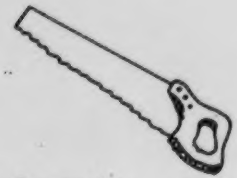
Saws

Coping Saw



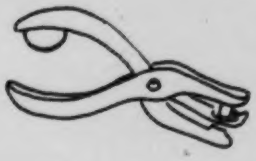
for cutting wood, styrofoam, or dowels

Hand Saw



for cutting larger pieces of wood

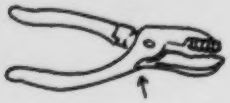
Paper Hole Puncher



for paper and poster board

Pliers

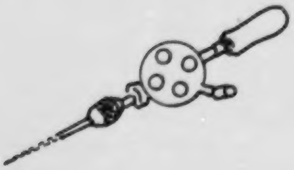
Cutting Pliers



for bending, twisting, center area for cutting wire

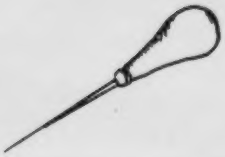
Hole Punchers

Hand Drill



for holes in wood

Awl

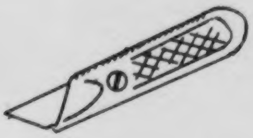


for small holes

To punch hole in hard plastic, heat awl in low flame for a few seconds. While hot, push it through the plastic.

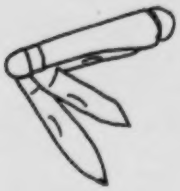
Knives

Mat Knife



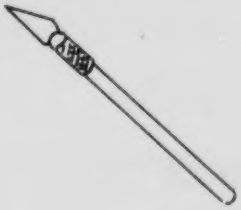
to make fine cuts, for whittling, for small curved cuts on balsa or paper

Jack Knife



for whittling

X-acto Knife



for straight cuts on cardboard and thin wood

Larger blades are for rough cutting, smaller blades for fine work. Keep blades sharp.

Art Supplies to Purchase

- tempra paints
- acrylic paints
- brushes
- construction paper
- glue
- sandpaper
- crayons
- felt tip pens
- colored pencils
- yarn
- string
- rubber bands
- pencils
- tracing paper
- carbon paper
- plaster of paris
- crepe paper
- tracing pencils
- popsicle sticks
- masking tape
- scotch tape
- toothpicks
- soap flakes
- pipe cleaners
- sponges
- Q-tips
- cotton balls
- foil
- waxpaper
- needles
- thread
- tissue paper
- potter's clay

Characteristics of Paints, Finishes, and Accessories

Tempra Paint

* Buy powdered tempra paint in one-pound cans and mix with water as needed. Use on paper, wood, fabric, glass, and rock.

* To mix powder paint, place 5 tablespoons powdered paint and 5 tablespoons water in a small milk carton. Press down lid and shake until mixed.

* To mix hard-to-mix powder paints, add a few drops of alcohol.

* To prevent paint from souring, add a little oil of cloves, wintergreen, or peppermint.

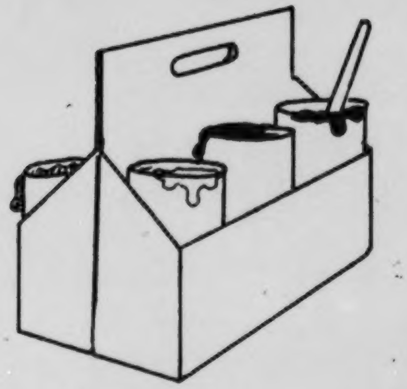
* To brighten powder paint, add small amount of evaporated milk or glycerine.

* To paint on glass, metal, or waxed surface, add soap chips or soap flakes.

* For pastel colors, start with white and gradually add drops of coloring until desired shade is achieved.

* To thicken paint, make a thick mixture of corn starch and water. Cook in double boiler until thick. Add 2 tablespoons of mixture to a jar of paint to extend and thicken the paint so there will be less dripping and the paint will be smoother.

* To prevent spills, put paint containers in a cardboard beverage holder or a holder made from boxes. Mix plenty of paint but, for brilliant colors, pour only a small amount in each container. Instead of washing containers daily, keep paint moist by storing entire carton in a plastic bag.



Permanent Paint

There are two types of permanent paint: water based and oil based.

Acrylic paint sold in tubes or jars is a water based paint. For small projects, place a dab of paint on wax paper or in a shallow container and add a little water for the desired consistency.

Latex paint is usually sold in large containers, mixed to paint walls and furniture. Apply with a roller, felt pad, or brush.

Clean water based spills and paint brushes with soap and water before the paint dries. Dried paint is permanent and waterproof.

There are oil based paints for art projects and home and industrial purposes. Show children how to smooth it with a brush to get an even coat with no drips. Clean brushes used for oil based paint with turpentine or commercial brush cleaner. Remove enamel from the sink with baby oil.

Spray Paints

* Follow directions on the can.

* Use outdoors only on a calm day.

* Place object to spray in large cardboard box.

* Protect surrounding area with newspapers.

* Spray away from body.

More Finishes for Wood

- varnish
- clear plastic finish
- for a streaked, antique effect – after painting and drying, a coat of dark brown stain wiped off before it dries

Glue and Paste

- For most projects, use a white water based glue unless otherwise specified in instructions. Use glue, not paste, on wood.
- For joining hard surfaces such as metal, use a household cement.
- Paste usually dries brittle and wrinkles paper.
- Use epoxy putty for uneven surfaces or when a thick area of glue is needed.
- Clean and smooth surfaces to be glued.
- Remove old glue or dirt. Wipe away excess glue while it's still wet.

Removing White Glue

- Soak in warm water several hours and then rub it off.
- Allow glue and paint to dry before going to next step in project.

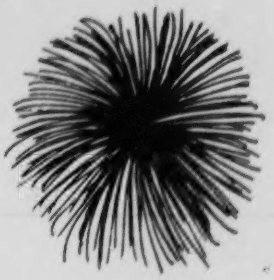
Clean-Up

- Clean-up is a necessary part of art work. Children will do it when clean-up supplies are handy.
- When water isn't available near art room, have a small bucket of water and a sponge or rag.
- Have handy a waste basket, broom, and dust pan.
- Clean and store paste and paint brushes immediately after use so that bristles aren't bent. Store in a long flat tray or upright container.
- Spread newspapers on the floor or table to protect materials and make clean-up easy.

11. Aids for Arts and Crafts

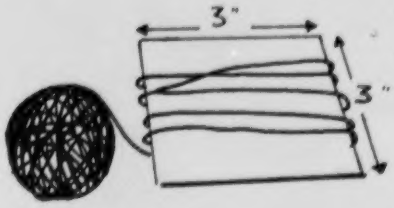
Yarn Balls

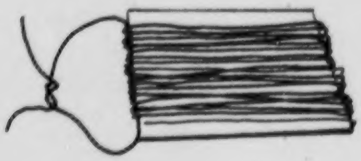
Materials: 2 skeins of rug yarn per ball, washable yarn, and casein glue



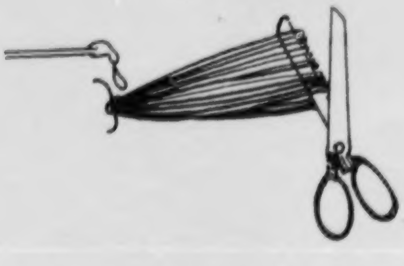
Directions:

1. Cut a piece of cardboard 3 inches square.
2. Wind yarn around cardboard 30 times and cut.

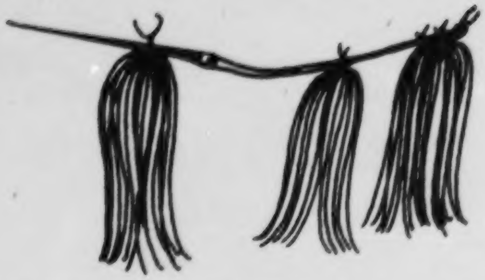




3. Slip a 6-inch length of yarn under the yarn on the card. Tie tightly.
4. Slip yarn off cardboard.
5. Cut loops.

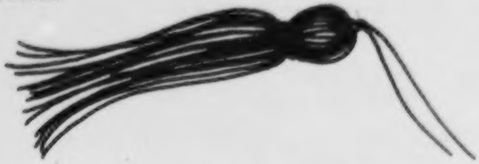


6. Put large drop of casein glue on knot and dry.
7. Continue until all the yarn is used.



8. To assemble the ball, thread a large needle with a 36-inch length of yarn. Push the needle through each knot and draw the tassels together. Pull tight and knot securely.

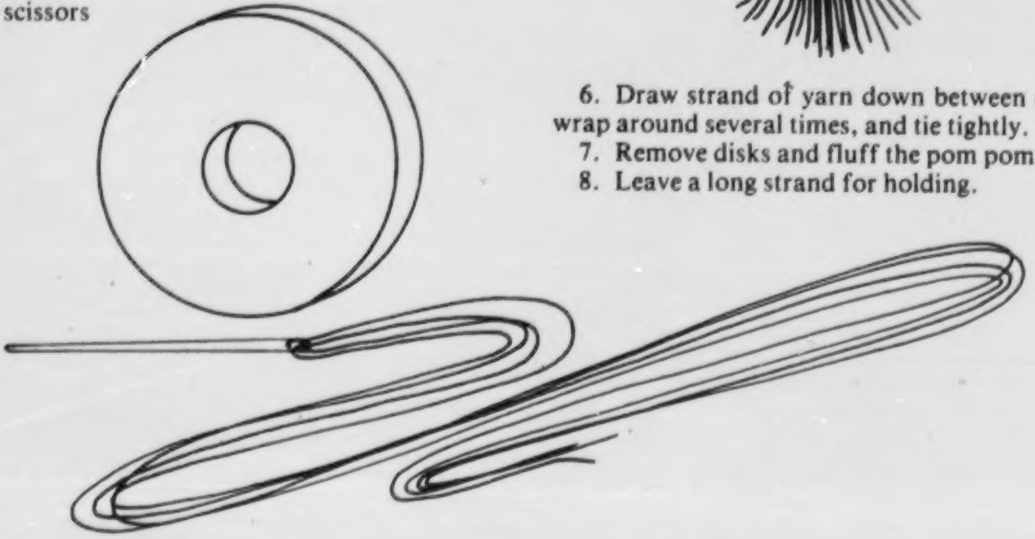
Tassels



Follow same instructions as above. Wrap a piece of yarn tightly around strands of yarn about ½ or 1 inch below the top and tie in a knot. Trim ends evenly.

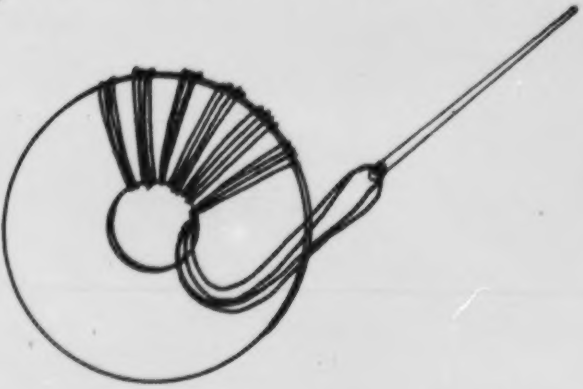
Pom-Poms

Materials:
- cardboard
- needle
- yarn
- scissors

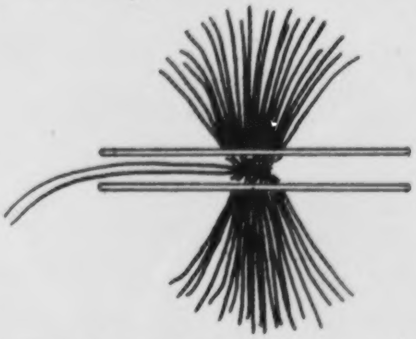


Directions:

1. Cut 2 circles out of cardboard.
2. Cut out ½-inch hole in centers of circles.



3. Thread a tapestry needle with 2 strands of yarn.
4. Put circles together. Wrap yarn round and round through hole.
5. Slip scissors between circles and cut yarn on outside edges.



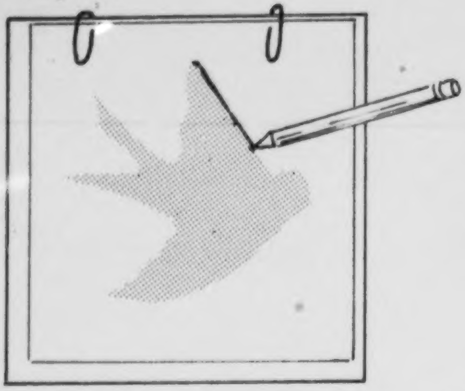
6. Draw strand of yarn down between disks, wrap around several times, and tie tightly.
7. Remove disks and fluff the pom pom.
8. Leave a long strand for holding.

Tracing

Method I

Directions:

1. Lay a sheet of tracing paper or tissue paper over the pattern or design to be copied.
2. Attach tracing paper with paper clips to hold it in place.

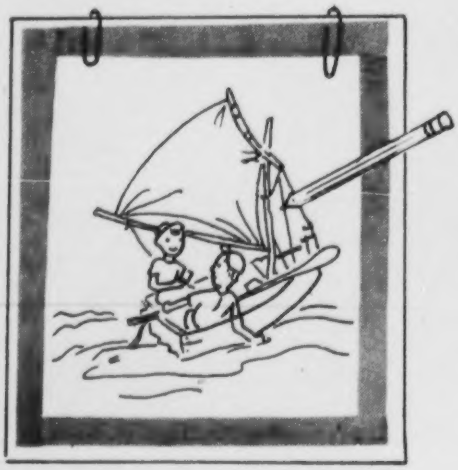


3. Trace outline with sharp pencil or ball-point pen. Work in a well-lighted area. If it's hard to see, trace against a window pane during the day.

Method II

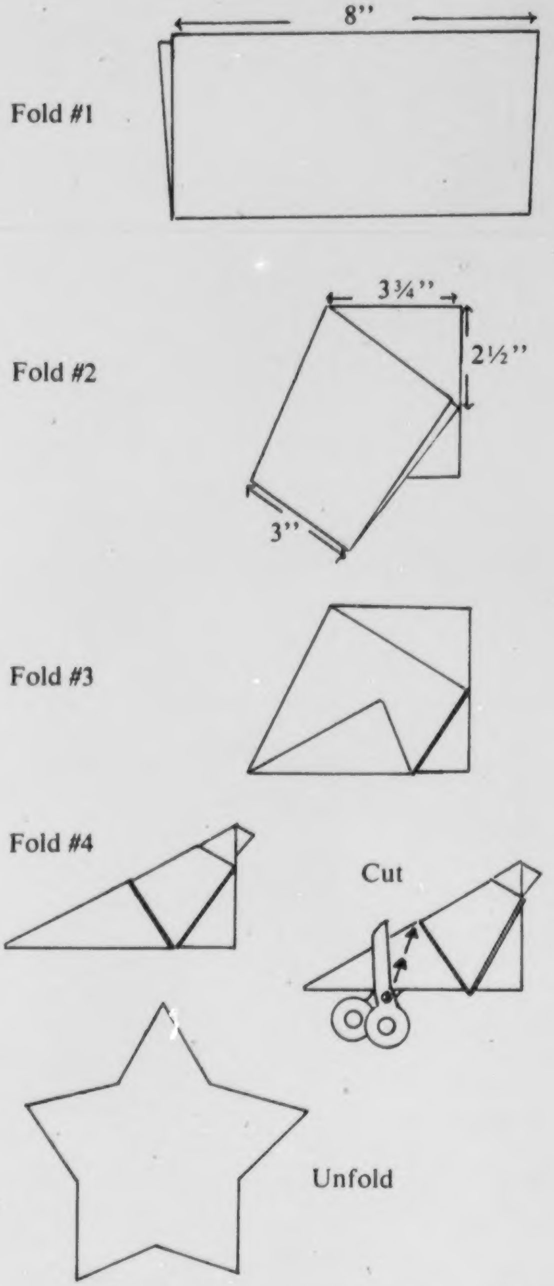
Directions:

1. Assemble paper with design on top, then carbon paper with carbon side down, then clean paper. Secure with paper clips.



2. Trace with pencil or ball-point pen.
3. This works well on designs that are difficult to see through tracing paper (i.e., designs with lots of colors or pastels without definite outlines).

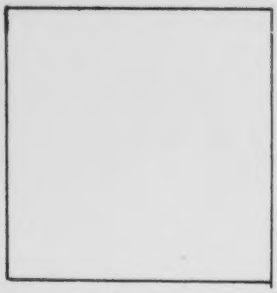
Cutting Stars



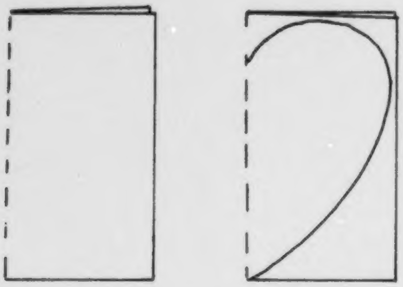
Suggestions: Begin with an 8-inch square of paper. When able to make folds without measuring, try using larger and smaller squares of paper.

Cutting Hearts

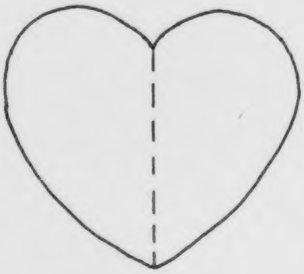
1. Begin with a square of paper, any size.



2. Fold square in half.



3. Draw half of heart on paper, with fold in center.



4. Cut along lines and unfold.

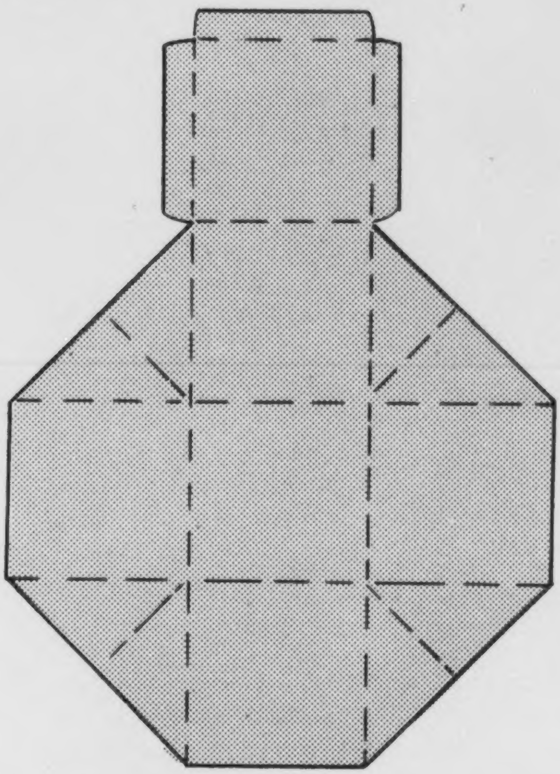
Making Cubes

Materials: heavy paper or light-weight cardboard

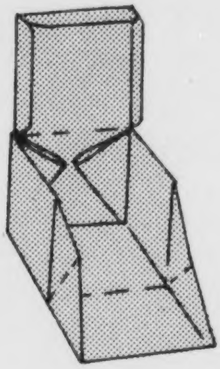
Directions:

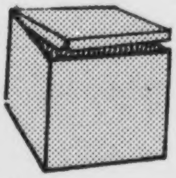
1. Decide on size cube desired. Measure and mark.

2. Cut out and fold along dotted lines, as shown.



3. Secure corner gussets (triangular insert in seam) inside cube with glue, tape, or staples.

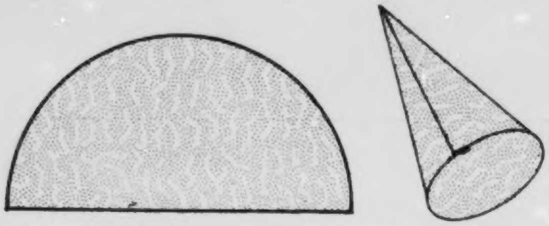




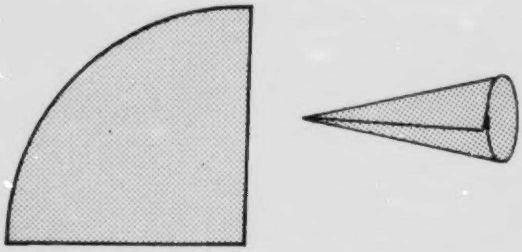
4. Fold top tabs down and glue in place.

Making Cones

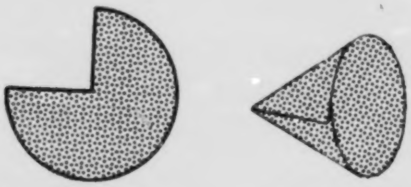
1. Draw a half-circle with a compass and cut it out.
2. Curve paper in the shape of a cone, overlapping the edges.



3. Glue or tape together.



Make a long thin cone from a quarter-circle.

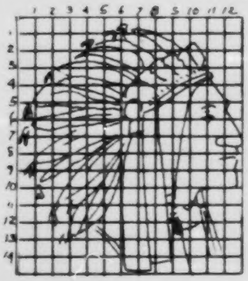


Make a wide, flatter cone from a complete circle with a small segment cut out.

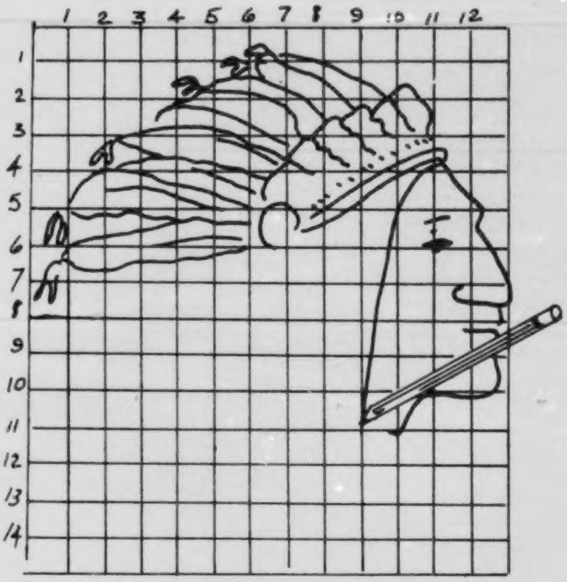
Enlarging and Reducing Drawings

To enlarge:

1. Trace design onto graph paper.



2. On large piece of paper, measure and draw larger squares to create larger scale graph paper.
3. Number lines on the top and side as shown, so that both graphs are numbered the same.



4. Draw design on larger graph, one square at a time.

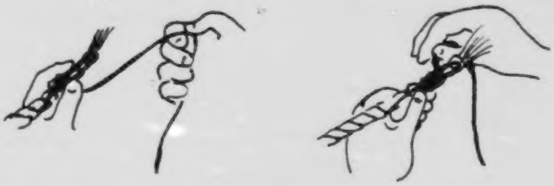
To reduce design, reverse the procedure.

Knots

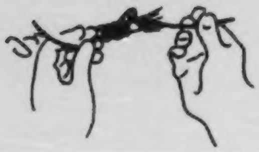
Cut nylon rope into workable lengths. To keep the rope from raveling, heat the rope-ends until they melt slightly and fuse together. (Ask the salesperson to do this when buying the rope.)

Other ropes should have the ends wrapped with string or twine, as shown.

Make a loop of twine and place at end of rope.

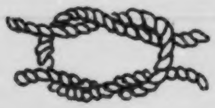


Wrap twine tightly around rope, starting ¼ inch from rope end.



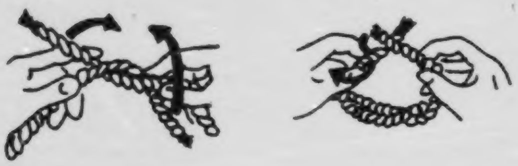
When whipping is as wide as the rope is thick, pull out ends tightly. Trim off the twine close to the whipping.

Below are 4 basic knots that are easy to tie and untie. Practice tying them and encourage the children to learn too.

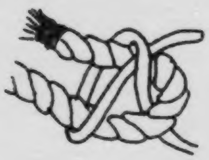


Square Knot: for tying ropes of equal thickness (very useful in first aid).

Twist left-hand rope-end over, behind, under right-hand rope.

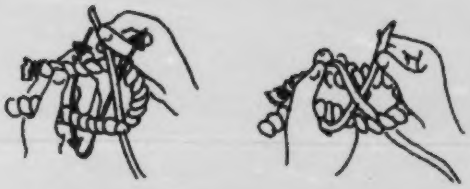


Again twist same end as before – over, behind, under. Left over right, right over left.

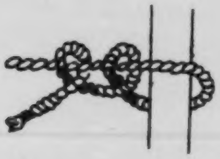


Sheet Bend: for joining 2 ropes of different thicknesses.

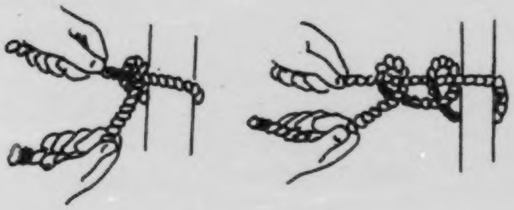
Form a bight (loop) on the heavier rope. Bring smaller line-end through loop, twist it over and under loop.



Then bring small line in under itself.

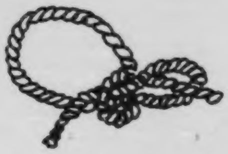


Two Half Hitches: for tying a rope to a pole or ring.



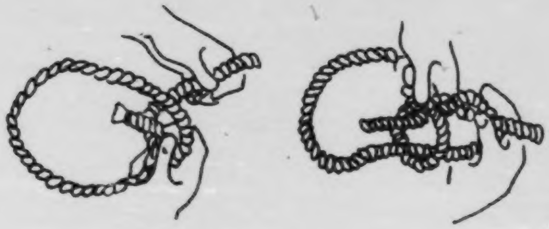
Pass rope around pole. Carry rope-end over and under and through loop that's formed.

Repeat.



Bowline: a non-slip loop (good for lifeline, rescue work).

Bring rope over itself to form loop, then bring rope-end up through loop. (See above.)



Pass end behind rope, then down through loop.

Using Plaster

- Apply cornstarch or talcum powder to aid the drying process.
- Clear-up immediately.
- Don't pour plaster into sink - it will stop up the drain.
- Mix plaster in disposable containers such as wax milk cartons.

Using Sawdust

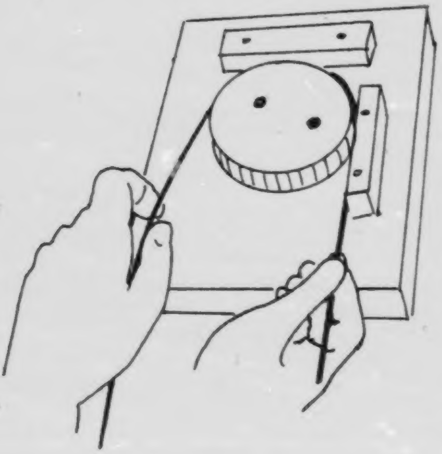
Sawdust also will clog a sink.

Using Ceiling Cardboard

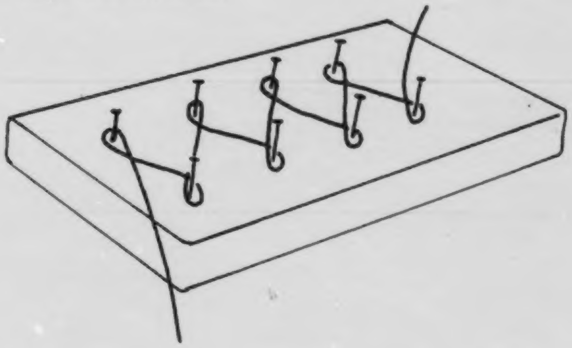
- Lay ceiling board on scrap cardboard to prevent cutting the table or floor.
- To cut a straight line, use a metal ruler.
- Cut along edge of ruler with a mat knife.
- Don't try to cut all the way through cardboard (especially thick pieces) on the first cut. Go over it several times and press gently.

Bending Wire

- To make a jig, nail jar lid and wood strips to a small board, as shown.



- Bend wire around jar lid to make an even horseshoe bend.
- To make figure-8 bends, hammer nails in board and bend wire into figure-8 around nails. Slip wire off nails.



Removing Stains

- Use solvents to thin and remove stains from clothes, brushes, and people.
- Wood alcohol must be used in a chafing dish and is very flamable and dangerous to breathe. Excellent for dissolving and removing shellac. Remove adhesives (such as tape) with 80-percent rubbing alcohol.
- Carbon Tetra Chloride is primarily for removing grease, and is poisonous to breathe.
- Rub cleansing cream on the skin to soften and partially remove oil base or acrylic paints from hair or skin, or dried paint from fabric.
- For wax removal, heat works best. For fabric, iron the piece on both sides gently with mineral spirits.
- Lacquer thinner is a powerful solvent and removes acrylic paint, latex, oil paint, cement glue, and nail polish. Nail-polish remover can be substituted, but produces harmful vapors - use small amounts.
- Milk removes ball-point pen marks. Shampoo also works well.
- Mineral spirits (paint thinner) is dangerous to breathe and flamable. It removes paint and cleans brushes.
- Turpentine is a paint thinner and extender. It's dangerous to breathe and flamable. Be very careful with rags - when improperly stored, they can catch fire. In case of fire, place lid on metal can and add water.
- Water is the most universal solvent. It's a thinner and brush cleaner for water based paints. It will dissolve most white glue and pastes.

Fixatives

Use fixatives to preserve chalk or charcoal drawings. Apply with a spray gun. Pin the drawings to a backing or to newspapers to protect walls. Use outdoors or in well ventilated areas inside.

- *Fixative 1:* Equal parts of liquid starch and water.
- *Fixative 2:* 1 part shellac and 2 parts alcohol.
- *Fixative 3:* Wallpaper lacquer. (Use several coats.)

12. Safety

Many of the materials and tools used in arts and crafts can be dangerous, so safety is a primary consideration. Everyone has responsibility, but adults must okay activities and directly supervise dangerous activities.

- Follow directions on labels.
- Many solutions, bleach for example, can cause a rash or burn the skin.
- Work with solvents and enamel paints in a well ventilated room or outside when it is not windy. It's dangerous to breathe fumes.
- Don't use fire around any flammable materials such as paint thinner or turpentine.
- Use knives and other tools carefully. Cut away from the body.
- Hold knives or scissors blade downward when walking with them.

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DAY CARE for School-agers

J. Music

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Music

1. Overview

Characteristics of Music

MUSIC is listening to sounds.
MUSIC is making sounds.
MUSIC is a way to express feelings.
MUSIC makes us think of faraway places.
MUSIC helps us appreciate what's around us.
MUSIC is fun.
MUSIC is exciting
MUSIC is everywhere.

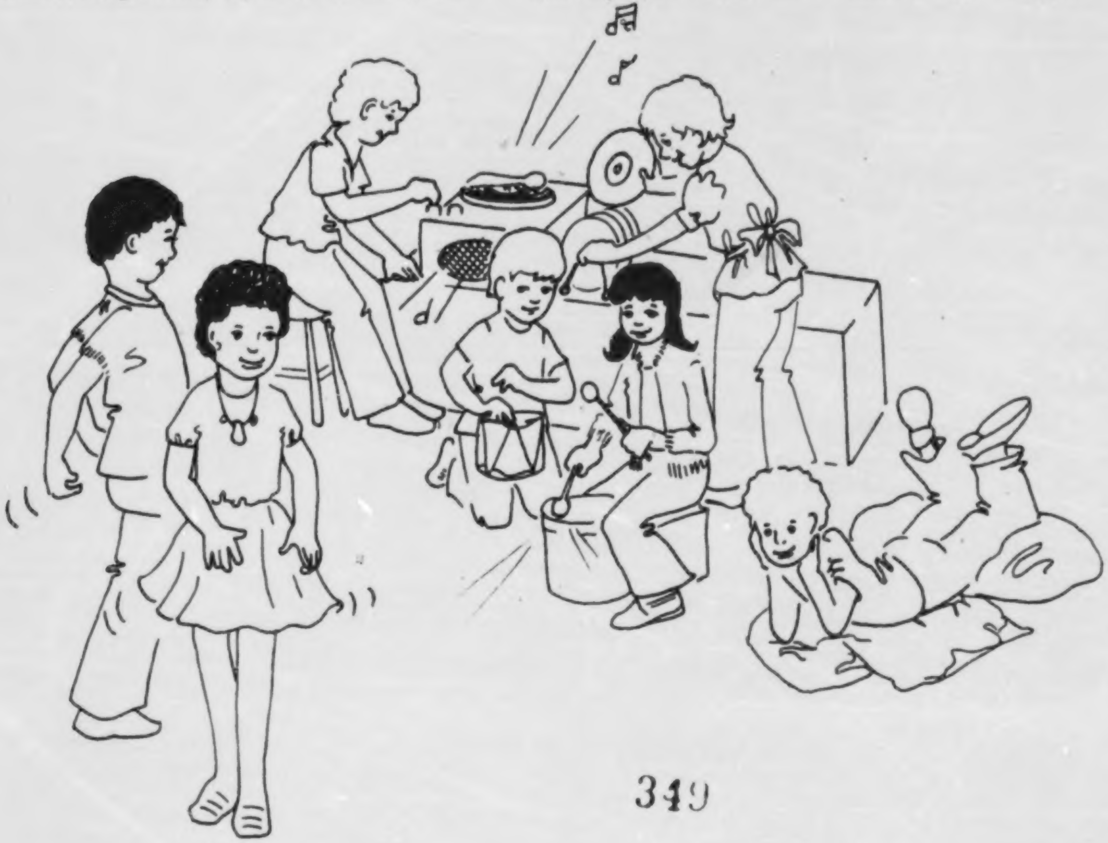
Music is a universal language. It is communicated through tone, rhythm, volume (loud-soft), range (high-low), tempo (fast-slow), and movement (flowing-choppy). Music can communicate feelings to children even when its cultural origin and language is foreign to them.

Music is an art. It's created, performed, and enjoyed.

Music is a science. It's created according to rules, with precise materials.

Music and Children

Children are acquainted with music from birth. The tone of a mother's voice, the rhythm of a rocking chair, and the chanting of nonsense syllables are basic to a child's life. Before



words, children understand tones and rhythms.

A music program can help school-agers continue to communicate and understand nonverbal signals. A well-rounded program should include listening, creative activities related to singing, body movement, and playing instruments. There should be time to experiment with sound-producing materials. When music is presented in a structured way, children can become bored.

Don't expect all children to remember words and rhythms, keep a beat, or sing in tune. Don't pressure them – have fun with them. The more they enjoy the activities, the more they will want to develop musical skills.

Do

- make interesting sounds
- listen to records
- sing songs
- create music
- talk about music
- participate with the children
- accept the children's favorite music
- vary music activities

Don't

- be too serious
- force children to perform
- be shy
- insist on perfection
- sit still
- make note of failures
- be bossy
- be critical

2. Appreciating Sounds

Music is sound. Some sounds are pleasant and musical, some are not. Not all sounds are music. Music is an organized arrangement of sounds with rhythm, melody, structure, and continuity.

Learning to appreciate sounds can help one appreciate music. And sounds can be enjoyed for their own sake. The wind, rain hitting a roof, the ticking of a clock, the sound of the surf — each sound is pleasant and may be considered a form of music. Such sounds can be involved in music activities.

Developing an Ear for Sounds

Children can take turns making quiet, distinct sounds (e.g. fingers snapping, scissors moving, tongue clicking). With their eyes shut, others try to find the sound-maker.

On a cassette recorder, ask children to describe some sounds they know well. Later, play back short parts of the interviews and see who can identify the sounds being described from a brief clue.

Guessing at Sounds

1. Collect household or center items that can make neat sounds.
2. Pick three or four to use at a time.
3. Place them on a table, first spreading a blanket or table cloth to soften any sounds made while arranging the items.
4. Use a box or curtain to hide the sound-makers.
5. Demonstrate the sounds and ask the children to guess what item is making each sound.
6. Encourage children to help make the sounds while others guess.
7. Possible sound-makers:
    - water being poured into a glass
    - scissors cutting paper
    - paper being torn
    - egg being cracked
    - forks and knives hitting against dishes
    - air escaping from a balloon
    - cards being shuffled

Sound Recordings (age 7 and up)

- On a cassette recorder, record sounds made in the classroom. For instance, water flowing into a sink, a door closing, a window being lifted, footsteps.
- Record outdoor sounds. For instance, cars, the wind, a swing, leaves flicking across the ground.

Listening to Music

- Don't have a lengthy introduction. Briefly tell what the music is. Perhaps ask the children to listen for a certain part.
- Have the music ready to play so there's no waiting time between the introduction and the music.

* Sit still or lie quietly when listening. The adult should set an example rather than dictate rules. Don't talk while listening – wait until the music is finished.

* Young children can't listen to music long without getting restless. Especially at first, play songs that don't last too long.

* Play a variety of music so the children can develop preferences. Play music with words. Show pictures of the instruments heard on the record, or show real instruments. Show album covers to create interest and provide something to look at while listening.

* Check out records from the public library, such as:

1. *American Folk Songs for Children,* Seeger, Folkways 7601.
2. *Counting Games & Rhythms,* Jenkins, SC7669.
3. *Glenn Miller Pure Gold,* RCA 8NL1-0974.
4. *Little White Duck,* Burl Ives, Col C-33183.
5. *Lullabies for Sleepy Heads,* RCA DEL1-0112.
6. *Marches by Sousa,* London Sp44103.
7. *Music for Children,* Orff, Angel.
8. *Modern Marches,* Hap Palmer, AR527.
9. *Orange Blossom Express,* Dot DLP25811.
10. *Simple Folk Songs,* Hap Palmer, AR518.
11. *Songs to Grow On,* Guthrie, Folkways FC7675.
12. *Spectacular Marches,* ARL 1-0450.
13. *This Land is Your Land,* Col MS6747.

3. Choosing a New Song

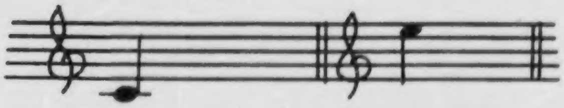
Young children have short attention spans and prefer doing to watching. The teacher might choose a short song with a single idea or mood, one that's good with nonsense words or new vocabulary will excite children. Songs which use familiar sounds (see "Appreciating Sounds") also are effective.

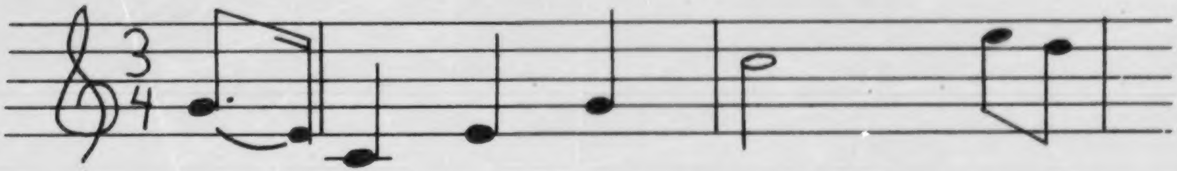
Ask the children if there's a song they'd like to sing. If it's a new song, listen and learn it. If it's an old song, join in.

When choosing a new song, consider these questions:

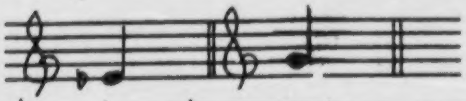
Will the song interest the children?
Will the teacher like the song enough to sing it over and over?
Does the song tell a story?
Does the song use interesting but easily understood words?
Do the words fit the melody?
What new ideas might the children learn from the song?
Will the children be able to sing all the notes, or does the range make the song difficult?

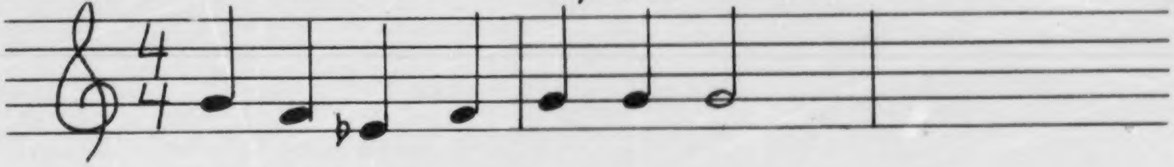
Hard To Sing. Range of notes:





Easy To Sing. Range of notes:





Here are three songbooks to begin with:

Songs to Grow On by Beatrice Landeck.
There's a Little Wheel A' Turnin'
All God's Children Got Wings
Old Woman and the Pig
Hoosen Johnny
Go Tell Aunt Rhodie
Blue Tail Fly
B-I-N-G-O
Mockingbird
Rock Island Line
Little Red Wagon
I Saw Three Ships
Oh, Christmas Tree
Muffin Man
I've Been Working on the Railroad
Skip To My Lou
Shoo Fly, Don't Bother Me

Can the children sing any of these songs by knowing the titles?

American Folk Songs for Children by Ruth Seeger.
Jim Along Josie
She'll Be Coming Round the Mountain
John Henry
Clap, Clap, Clap Your Hands
Frog Went A' Courtin'
Jimmy Crack Corn
This Old Man

Texas Folk Songs by William A. Owens.
Saw an Old Crow
The Old Gray Goose
The Brown Duck
Old Jay Bird
Go To Sleepy
Old Fodder

4. Songs From Various Cultures

Songs from various cultures can enrich the music program. They also can help children learn about music and languages.

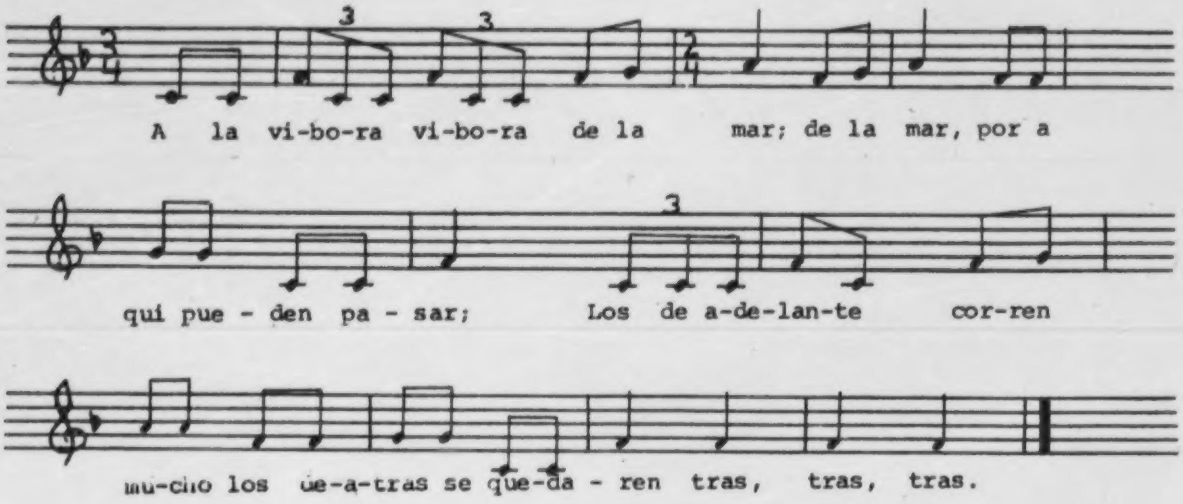
Here are some books to begin with:

1. *A Fiesta of Folk Songs From Spain and Latin America* by Henrietta Yurchenio.
2. *Sing, Children, Sing Songs, Dances and Singing Games of Many Lands and Peoples* by Carl S. Miller.
3. *Walk Together Children* (a collection of Black American spirituals) by Ashly Bryan.
4. *Around the World in Song* by Dorothy Gordon.

A LA VIBORA DE LA MAR

(To the Serpent of the Sea)

Mexico

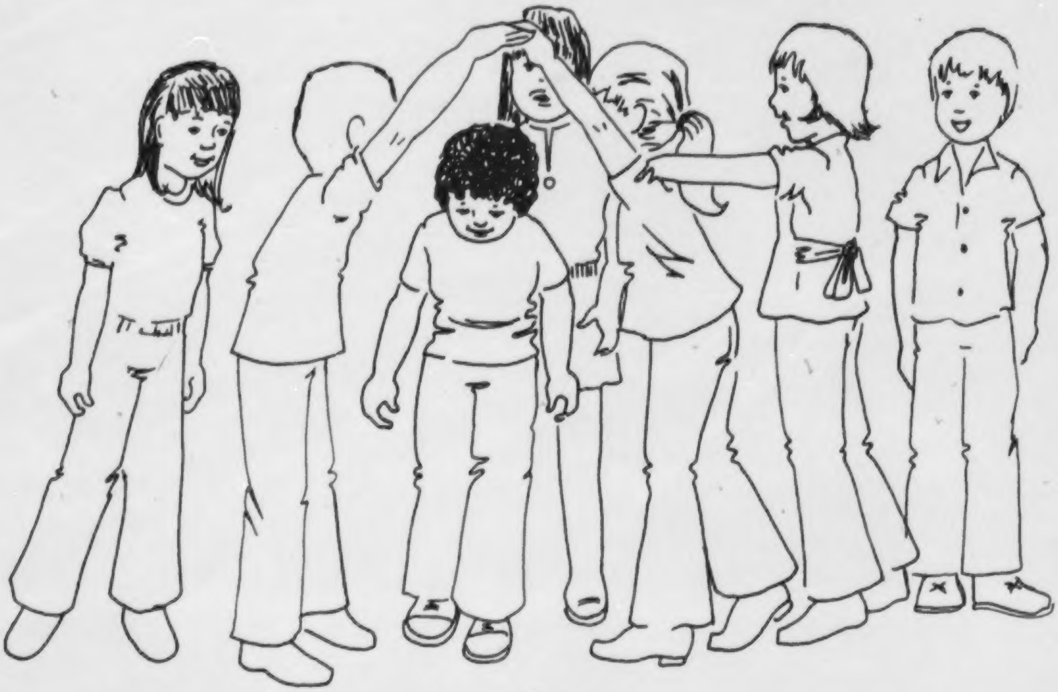

A la vi-bo-ra vi-bo-ra de la mar; de la mar, por a
qui pue - den pa - sar; Los de a-de-lan-te cor-ren
mu-cho los de-a-tras se que-da - ren tras, tras, tras.

Translation:

To the serpent, serpent of the sea, of the sea,
One can pass by here;
Those who run fast get past,
Those who tarry are caught.

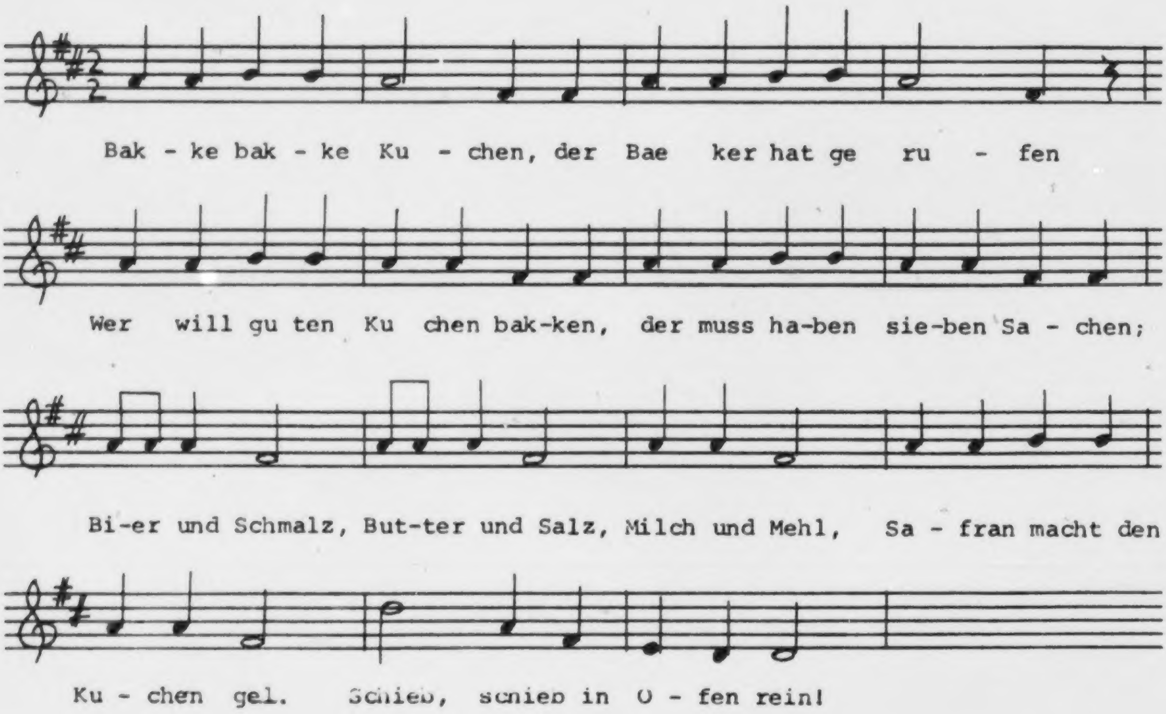
Directions for Game:

The children try to pass the home of the sea serpent without being captured. Played like



"London Bridge." Two players hold hands up high to form a bridge. Each becomes a team capatin and secretly chooses the name of a fruit for a team name. The others sing while passing single file under the bridge. The last line of the song says: "those who run fast get past, those who tarry are caught." The children move in a figure 8, which also represents the serpent. The last player who passes as the children sing, "Tras, tras, tras" is captured, and is asked by one of the team captains, quietly so that others can't hear, to pick a fruit. The player then stands behind the captain whose team is named after the chosen fruit. When all of the children have been caught, the game ends with a tug-of-war between the two sides.

Backe, Backe Kuchen (German)
Bake, Bake a Cake


Bak - ke bak - ke Ku - chen, der Bae ker hat ge ru - fen
Wer will gu ten Ku chen bak-ken, der muss ha-ben sie-ben Sa - chen;
Bi-er und Schmalz, But-ter und Salz, Milch und Mehl, Sa - fran macht den
Ku - chen gel. Schieb, schieb in O - fen rein!

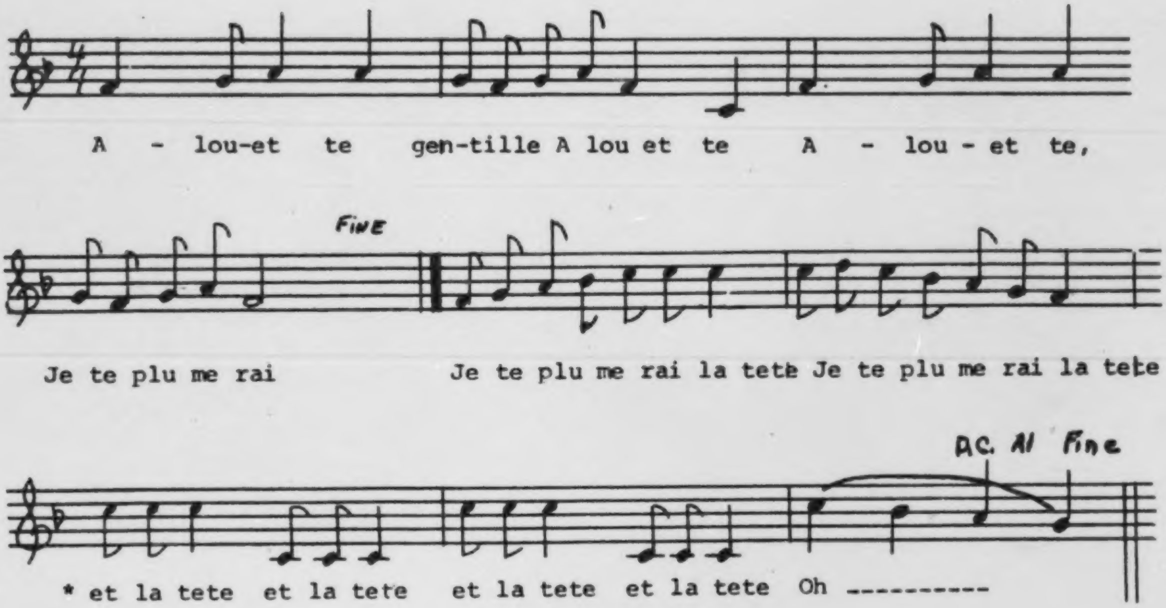
Directions:

The children clap their hands while singing. They count on their fingers the seven ingredients, then push the cake into the oven.

Translation:

Bake, bake a cake, the baker was calling!
Who wants to bake a good cake has to have seven things:
Eggs and lard, butter and salt, milk and flour,
Saffron makes the cake yellow.
Push, push, into the oven!

Alouette (French)
Skylark


A - lou-et te gen-tille A lou et te A - lou - et te,
FINE
Je te plu me rai Je te plu me rai la tete Je te plu me rai la tete
D.C. Al Fine
* et la tete et la tete et la tete et la tete Oh ----------

1. Je te plumerai la tete, etc.
2. Je te plumerai le bec, et la tete, etc.
3. Je te plumerai le cou, et le bec, etc.
4. Je te plumerai les ailes, et le cou, etc.
5. Je te plumerai les pattes, et les ailes, etc.
6. Je te plumerai le dos, et les pattes, etc.
7. Je te plumerai la queue, et los dos, etc.

*repeat all previous verses in reverse order

Translation:

Skylark, pretty skylark, I will pluck you. I will pluck your (1) head, (2) beak, (3) neck, (4) wings, (5) legs, (6) back, (7) tail.

5. Learning New Songs

General Guidelines

* Sing the song through the first verse and chorus, or play a recording of the song and sing along with it. Let the children hear it several times the day it's introduced, and frequently for several days until it becomes an "old favorite."

* Don't teach the song phrase by phrase. Don't teach the words separate from the melody or ask many questions about the song. When children like a song, they'll learn it quickly. It won't have to be forced upon them.

* Be relaxed while singing. Don't try to sing louder than the children.

* Sing in a natural and casual way, not as a performer but for the fun of it.

* Ask the children to listen to each other while they sing.

* Sing in a comfortable, close group. The children should not sit in chairs in rows, away from each other. Everyone will feel more like singing in a relaxed circle, close together.

* Don't stare at a songbook. Look at each other - smile and show pleasure. Show the feeling of the songs with facial expressions.

* Singing with a group can create a nice feeling of togetherness.

Singing With Records

Using records is fun and a successful way to introduce songs. Play the whole song several times for the children. Then sing with it and ask the children to do the same.

It may be necessary to review the lyrics with younger children. Sometimes the record tempo is too fast for them to catch all the words.

Six Sing-along Records:

1. Woody Guthrie, *Songs to Grow On* (Folkways, FC 7675), includes:
   "Wake Up"
   "Put Your Finger in the Air"
   "Dance Around"
   "Race Down The Mountain"

2. Pete Seeger, *American Folk Songs for Children* (Folkways, FC, 7601), includes:
   "Train is a – Coming"
   "This Old Man"
   "Billy Darrow"

3. Songs of the Pioneer, *25 Favorite Cowboy Songs* (RCA CPM 1130), includes:
   "Tumbling Tumbleweeds"
   "Home on the Range"
   "Sweet Betsy From Pike"
   "Red River Valley"
   "Cool Water"
   "Yellow Rose of Texas"

4. Hap Palmer, *Simplified Folk Songs* (RCA CP, AR 519), includes:
   "Michael Row The Boat"
   "Paw Paw Patch"
   "Early in the Morning"
   "All Day All Night"

5. Burl Ives, *Little White Duck* (Columbia, C33123), includes:
   "Little White Duck"
   "Mr. Rabbit"
   "Mother Goose Songs"
   "The Donut Song"

6. Ella Jenkins, *Little Johnny Brown* (Scholastic Records, SC7631), includes:
   "What's Your Name"
   "Freedom Train"

6. Spontaneous Singing

- Encourage children to sing while they play, especially while outside.
- Set a good example – sing favorite songs while working or overseeing outdoor play.
- When asked, sing along with a child.
- Put songbooks on a handy table. Children may sit down, find a favorite song, and sing quietly to themselves.
- Singing isn't only for special, planned activities; it's a nice part of everyday life.
- Songs can put children into nice and useful moods: clean-up songs, songs about sharing, about helping and solving problems.
- Most young children like to make up songs. Even very young children sing about what they're doing or how they're feeling. Often there's a vague melody, and words and melody are repeated. Once the child stops singing and goes on to other activities, it's likely the song will not be sung again in exactly the same way.

Encourage this kind of singing. Show approval, but guard against over-praising. Usually children don't know someone is listening and might become self-conscious if they feel too much of a fuss is being made about their singing.

7. Activities With Songs

One-Word Songs (age 4-8)

- Ask the children to think of an interesting word – one with several syllables that are easy to say (e.g. alligator). Then sing or chant it.
- See how many different song versions of the word can be invented.

New Words from Old Songs (age 4-10)

- Sing the song with the original words.
- Ask the children to suggest new words which fit the original story (e.g. "Old MacDonald").
- Or ask them to suggest a whole new set of words using the original melody.

Name That Tune (age 7 and up)

- Like the TV game show. The children take turns humming the melodies of familiar songs and their friends try to guess the song.
- Keep score to see who can stump the class most often.
- Whoever stumps the class can give the title and sing the first few lines.
- When a song is guessed, everyone can sing part of it.
- Melodies from TV commercials and shows are good for this game.

Song Recordings (age 4-10)

- Use a cassette tape recorder.
- Help the children pick a song.
- Practice the song a few times.
- Record it, then play it back.
- One person or a group can record songs.

Popular Songs

Occasionally there's a hit song that's perfect for children to learn (e.g. "The Yellow Submarine"). But many "Top-40" songs aren't good for group singing. They may be too complicated, or their quality may depend on instruments more than lyrics. But they're nice to hear and sometimes to act out.

8. Moving With Music

Music makes people want to clap hands, tap their toes, and dance. When music is enjoyed, people want to *move* in time with it. Moving can be fun for its own sake, and a way to enjoy music even more.

As for the children, movements should show their feelings. These feelings are valuable. They may have to do with who the child is, with the child's identity. Be encouraging. Smile, show approval.

Goals

- To teach children to express themselves with body movement.
- To teach them to interpret music, to be aware of how music can express emotion.
- To help children develop rhythm skills: moving, clapping, playing simple instruments rhythmically, recognizing rhythm patterns.
- To help them feel good about themselves.
- To help them feel good about being part of a group.
- To give them a chance for physical exercise, which is good for the body and an outlet for tensions.
- To help them notice and appreciate the body and how it works and moves.

Getting Started — Moving Part of the Body Without Music

- Fingers and hands: bending, separating, stretching, curling, making fists, slapping.
- Arms: pushing, pulling, stretching, swinging.
- Feet and legs: stomping, shuffling, brushing, kicking, waving.
- Toes: bending, wiggling, separating, stretching forward and backward, squeezing together.
- Elbows: touching, making circles.
- Head: bending, shaking, rolling, nodding.
- Eyes: opening, shutting, looking up, down, and around.
- Nose: wiggling, breathing in and out.
- Mouth: opening wide, making shapes, shutting tight.

Getting Started — Whole Body Movements Without Music

- Lying on stomach, move body by using arms and hands only.
- Lying on back, move body by using only the feet. Wiggle towards something.
- Walking
  - noticing how arms swing;
  - without moving arms;
  - at various speeds;
  - with feet spread apart;
  - with toes pointed in or out;
  - heel to toe;
  - with big steps;
  - backwards, doing any of the above;
  - like Frankenstein monster - knees locked and arms straight out;
  - according to the direction, the director changing directions quickly (the director probably a child).

- Marching
  - in place, knees raised high;
  - moving with knees high;
  - with knees locked;
  - to various kinds of music;
  - according to direction.
- Sliding
  - on cardboard, towel, anything that makes sliding easier;
  - forward;
  - backward;
  - with right foot leading, with left foot leading;
  - sideways — slide one foot to side, pull other foot to it;
  - to music;
  - while walking.
- Galloping
  - with the same foot always in front;
  - as if riding a horse;
  - in time with music;
  - according to directions.

* Animal movements are fun (e.g. seal, elephant, bear). Idea: run relay races while moving like an animal.

- Skipping
  - in time with music;
  - according to direction.

Adding Sounds to Movement

Use the voice, musical instruments, and other sound makers, not to dictate how a child moves, but to emphasize how the child already is moving.

Sounds — laughing, crying, whispering, growling, roaring, cooing, sighing, snoring, buzzing, yawning, humming, shouting, purring.

Sound Makers — rhythm sticks, blocks, shakers, tambourines, toys, drums, cardboard cubes, bells, boxes, kitchen utensils.

Ideas For Moving With Music

Once everyone has the habit of listening closely to sounds and moving without embarrassment, they can begin moving with music. Some will respond with recognizable dramatic action. Others may move in a way that doesn't seem to *mean* anything. That's okay too.

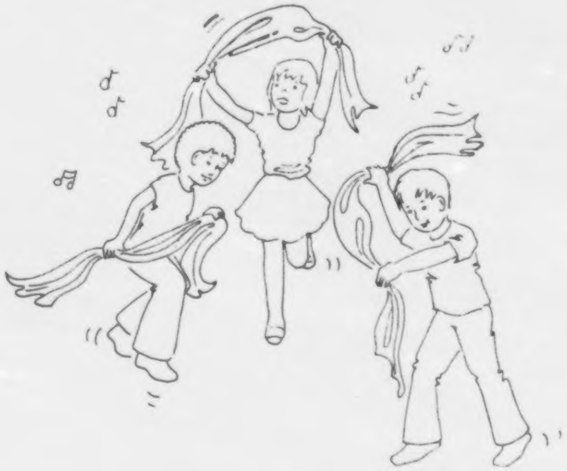
Children could start by walking to the beat of a drum, stopping when the drum stops and beginning when the drum starts. Any movement is okay. It's important that the children are free to be creative. The only advice should be that they listen closely to the music.

* Situations to act out with music;

Simple	*Complex*
fly like an eagle	which has just eaten dinner
flap like a flag	on a windy day, a calm day
walk as if on ship ...	in a storm
waddle like a duck ..	with a broken wing
stretch like a rubberband	that snaps
jump like a rabbit ..	with a hurt leg
run	like an elephant, a cat

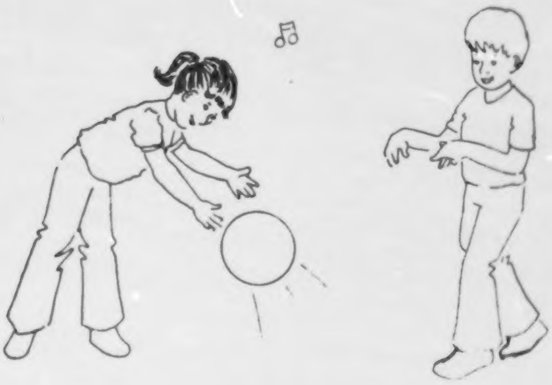
* Bag full of secrets: Fill a grocery bag with things which can be made to move. Examples: elastic, a pencil, a stapler, an egg beater, a rubber band, clothespins, a silk scarf, a ball, a tube of toothpaste, a salt shaker. Reach into the bag and hold something up for everyone to see. Ask someone or everyone to move like the object, in time with background music.

* Slow-motion: Like slow-motion in TV sports. The children could move like a football player, a gardener, a janitor, etc. If they like, have a rule that movement must be silent. Slow-motion games are especially fun to do in time with music.

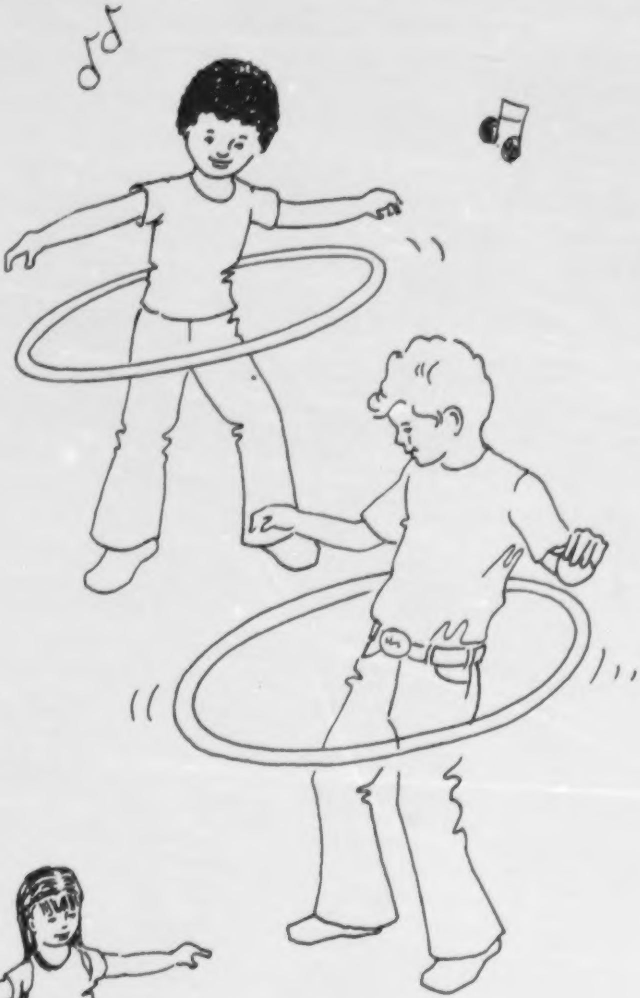


* Moving with scarves (or any lightweight material): Wave the scarf in time with the music, using first one hand and then the other, tossing and catching it, experimenting with it, maybe playing follow-the-leader. String works, too.

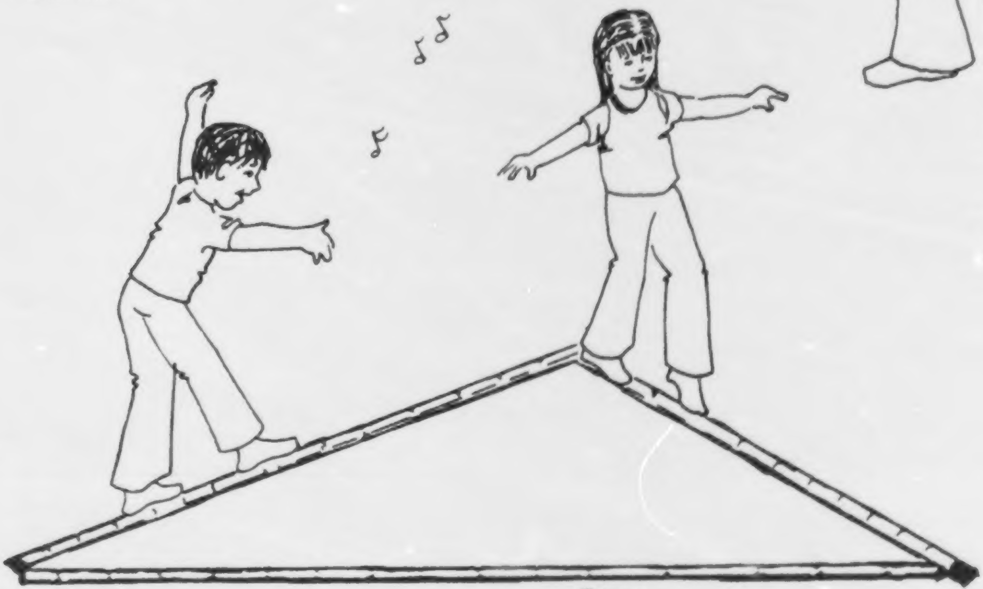
* Playing with balls: Use large, colorful balls, enough so that several can play at a time. Children could sit in a circle and roll a ball to each other in time with music. Or they could roll, bounce, throw balls with music. They could bounce balls during the chorus of a song and hold them during the verses, or vice versa. They could bounce balls on every other beat of a song.



* Hula hoops: In time with music, whirl them around the waist, around one arm, or put them on the floor and hop from one to the other. Roll them.



* Using poles: Use bamboo poles, each about four to eight feet long. Put them into shapes such as triangles, squares, or parallels. Think of games such as tip-toeing along the outside of a triangle, then jumping inside when the music changes. Or, use narrow boards to pretend to be crossing a bridge, paddling down a river, or walking on a high wire in a circus. Always with the music.



Dance

- Spontaneous Dance: If a child moves the same way each time a song is played, take note and help the child remember the moves. Name the dance after who invented it. Develop variations, add clapping, teach the dance to others.
- Folk Dance: Folk dancing is popular all over the world. Records and instructions for folk dancing are easy to find in local libraries. The children either may learn the actual dance or make up their own steps to folk music, paying attention to the music's moods and patterns. Often the dances they make up will be like an established folk dance.
- Popular Dance: Children are made aware of popular dances by parents, older brothers and sisters, and television. Encourage them to experiment with "disco," country-western, and ballroom dancing. Use records or the radio.

Songs That Call For Special Movements

Hokey Pokey

You put your right hand in,
You put your right hand out,
Your put your right hand in,
And you shake it all about;
You do the Hokey-Pokey and you turn yourself around;
That's what it's all about.

You put your left hand in . . . .

You put your right foot in . . . .

You put your left foot in . . . .

You put your head in . . . .

You put your right elbow in . . . .

You put your left elbow in . . . .

You put your front side in . . . .

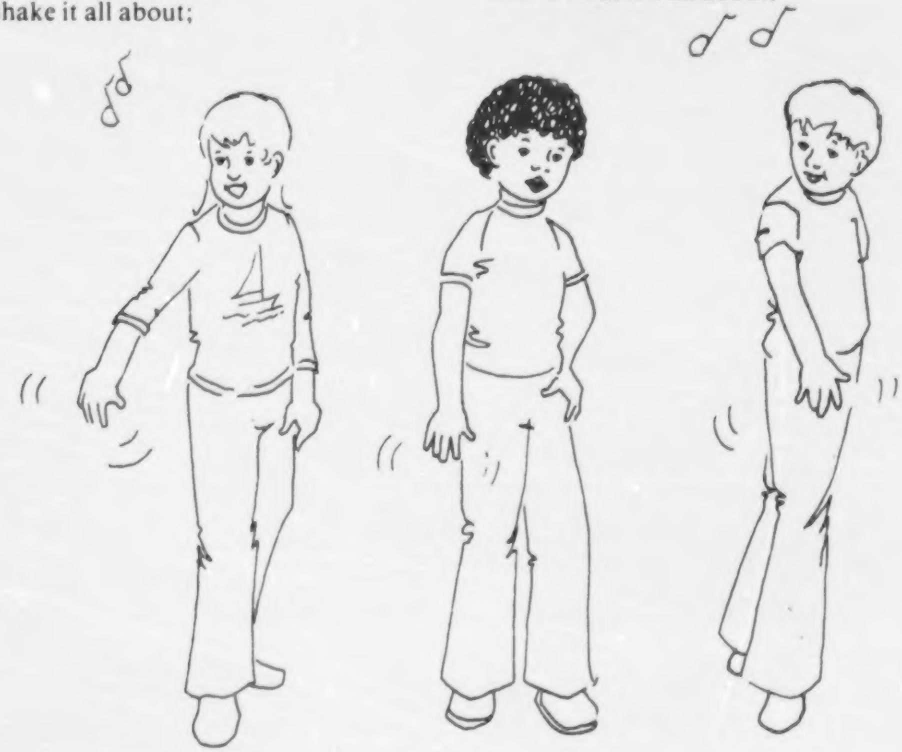
You put your back side in . . . .

You put your whole self in . . . .

You put your shoulders, arms, etc.

End:

You do the Ho-Key Pokey,
You do the Ho-Key Pokey,
That's what it's all about.



The Farmer in the Dell

Directions:

The children form a circle. One child is the farmer in the middle. The others join hands and sing, marching around the farmer. The farmer chooses a wife, etc. Finally, only the cheese is left. Whoever represents the cheese is the new farmer.

The farmer in the dell,
The farmer in the dell,
Heigh-ho, the derry-o,
The farmer in the dell.

The farmer takes a wife,
The farmer takes a wife,
Heigh-ho, the derry-o,
The farmer takes a wife.

The wife takes a child,
The wife takes a child,
Heigh-ho, the derry-o,
The wife takes a child.

The child takes a nurse,
The child takes a nurse,
Heigh-ho, the derry-o,
The child takes a nurse.

The nurse takes a dog,
The nurse takes a dog,
Heigh-ho, the derry-o,
The nurse takes a dog.

The dog takes a cat,
The dog takes a cat,
Heigh-ho, the derry-o,
The dog takes a cat.

The cat takes a rat,
The cat takes a rat,
Heigh-ho, the derry-o,
The cat takes a rat.

The rat takes a cheese,
The rat takes a cheese,
Heigh-ho, the derry-o,
The rat takes a cheese.

The cheese stands alone,
The cheese stands alone,
Heigh-ho, the derry-o,
The cheese stands alone.

Round the Mulberry Bush

Here we go round the mulberry bush,
The mulberry bush, the mulberry bush,
Here we go round the mulberry bush,
So early in the morning.

This is the way we wash our clothes,
We wash our clothes, we wash our clothes,
This is the way we wash our clothes,
So early Monday morning.

This is the way we iron our clothes,
We iron our clothes, we iron our clothes,
This is the way we iron our clothes,
So early Tuesday morning.

This is the way we scrub the floor,
We scrub the floor, we scrub the floor,
This is the way we scrub the floor,
So early Wednesday morning.

This is the way we mend our clothes,
We mend our clothes, we mend our clothes,
This is the way we mend our clothes,
So early Thursday morning.

This is the way we sweep the house,
We sweep the house, we sweep the house,
This is the way we sweep the house,
So early Friday morning.

This is the way we bake our bread,
We bake our bread, we bake our bread,
This is the way we bake our bread,
So early Saturday morning.

This is the way we eat our bread,
We eat our bread, we eat our bread,
This is the way we eat our bread,
So early Sunday morning.

Note: Encourage the children to make up variations for the lyrics.

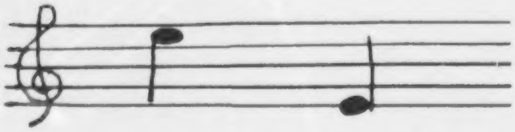
9. Reading and Writing Music

Most children are interested in music notation and will ask about it. Introduce them to pitch, the names and positions of notes, and rhythm. Encourage them to look at notation in songbooks and sheet music. Point to the notes being sung.

In music notation, notes (𝅝, 𝅗𝅥, ♩, ♪) are written on a "musical staff" (𝄚).

Pitch

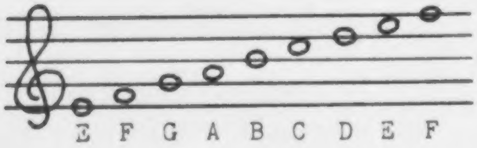
Pitch is the highness or lowness of sound. Pointing to notes as they are sung will help the children become familiar with the concept of pitch. Children will soon understand that:



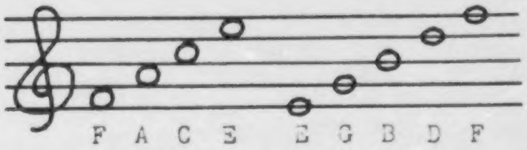
high sounding notes are high on the staff	low sounding notes are low on the staff.

Names and Positions of Notes

Notes are called after the line or space on which they are placed.



Teaching Hint: The spaces between lines spell the word "FACE." The saying, "Every Good Boy Does Fine," can help children remember the lines.



Rhythm

Rhythm is the "beat." Different notes last for different lengths of time. Common notes are:

𝅝	Whole Note	♩	Quarter Note
𝅗𝅥	Half Note	♪	Eighth Note

Have the children walk around the room. As they step, they can say the word "walk" and clap their hands. Make sure the beat is steady. Then try running. The tempo should be twice as fast as before. They clap their hands for each step and say the word "run." The instructor then can write rhythm patterns and the children can clap while sitting down.

Walk Walk Walk Walk
Run Run Run Run Run Run Run Run

Here is another rhythm to try. The "walk" means give a walking clap; "run run" means give two short claps in place of one walking clap; "hold" means no sound should be made. An example pattern is:

Walk Hold Run Run Run Run
Walk Hold Run Run Run Run

In music, the walking clap could be a quarter note (♪). When the walking clap divides into two running claps, each is a eighth note (♪ ♪). A "walk-hold" is a half note (𝅗𝅥). A "walk-hold-hold-hold" is called a whole note (𝅝). A "hold" by itself represents a rest (𝄽).

Rhythm Patterns

Rhythms usually fall into regular patterns of beats. Clap a walking rhythm in patterns of two. Clap the first "walk" with a heavy accent as indicated by the underline, clap the second "walk" lightly. The lines between the "walks" show that there is a grouping with two beats. Count "one-two" while clapping. The divisions shown here represent measures in music:

.

1	2	1	2	1	2
Walk	Walk	Walk	Walk	Walk	Walk

One can substitute two runs in place of a "walk" or use a "walk-hold" in place of two "walks." The children still feel a two-beat pattern.

1	2	1	2	1	2	1	2
Walk	Run Run	Walk	Run Run	Walk	Hold	Walk	Hold

Then write out patterns in groups of three and four beats, using variations.

Rhymes and Rhythms

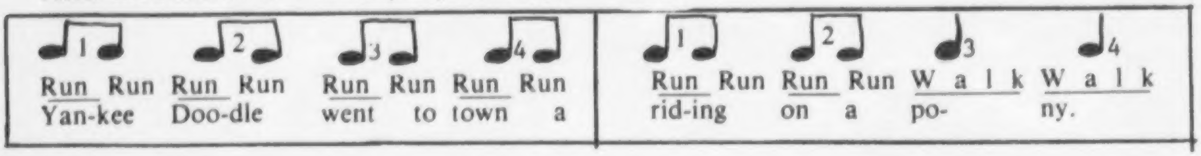
Many rhymes fall into regular patterns. Write some for the children and let them clap as they chant the rhymes.

1	2	1	2	1	2	1	2
Walk	Walk	Walk	Walk	Run Run	Walk	Walk	Hold
Rich	man,	poor	man,	beg-gar	man,	thief,	....

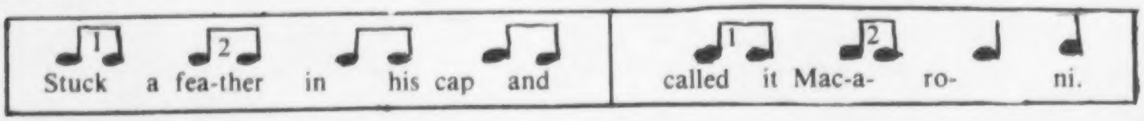
1	2	1	2	1	2	1	2
Walk	Walk	Walk	Walk	Run Run	Walk	Walk	Hold
Doc-	tor,	Law-	yer,	In- di-	an	Chief.	

Picturing Rhythms

After the children learn to clap rhythmically, they can learn to read rhythms in musical notation.


1
2
3
4
Run Run Run Run Run Run Run Run
Yan-kee Doo-dle went to town a
1
2
3
4
Run Run Run Run Walk Walk
rid-ing on a po- ny.

Finally, the "walk," "run," and "hold" can be omitted.


1
2
Stuck a fea-ther in his cap and
1
2
called it Mac-a- ro- ni.

Some children (or the instructor) may want to know more about reading and writing music. Here are some relevant books:

1. *Learning to Read Music* by Robert Lilienfeld.
2. *Basic Forms in Music* by Charles W. Walton.
3. *The Alphabet of Music* by Robert W. Surplus.

10. Musical Instruments

Most children like to experiment with small instruments (drums, bells, etc.). The children can make some of these instruments and learn how sounds are made. They also will develop their understanding of rhythm and pitch and preferences for certain instruments.

Homemade Instruments

The instruments presented here are easy to make and, even when not precisely tuned, are much like the professionally made instrument.

Making instruments can be enjoyable in various ways. Some children enjoy making instruments in order to play tunes, make up songs, and make music with others. Other children are interested in the actual construction. Others especially like decorating the instruments. Some children like finding out how sounds are made.

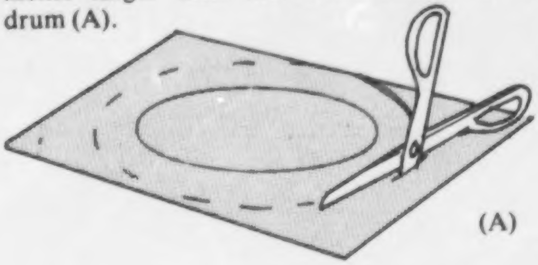
Drums

Materials:

- clean, empty containers for the cylinders - different sizes, different materials (wood, cardboard, metal, pottery) with one or both ends open
- for the drumheads, chamois skin, tire tubing, supple leather, fabric which doesn't stretch
- something to hold the drumheads in place - rubber bands, elastic, or lacing
- white glue for molding and firming-up fabric if fabric is used for drumhead
- swab or old toothbrush to apply glue
- acrylics or other paint to decorate the drumhead

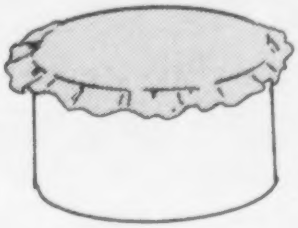
Directions:

1. Cut the material for the drumhead about 2 inches larger than the circumference of the drum (A).



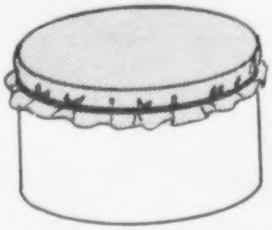
(A)

2. Moisten the material and place it over the end of the drum cylinder (B).



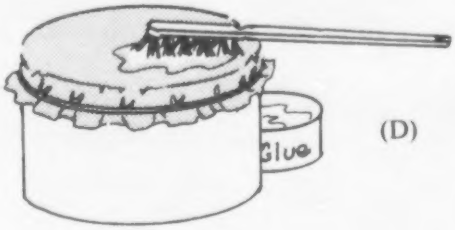
(B)

3. Stretch rubber bands over the material and around the cylinder to hold the material in place. The bands must fit tightly. Stretch the material to free it from wrinkles (C).



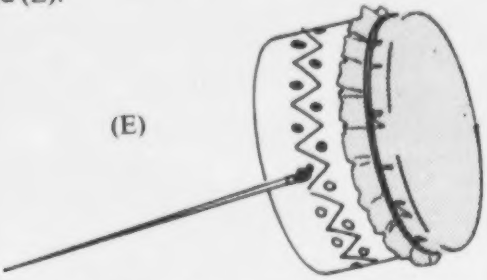
(C)

4. Apply white glue to moistened cloth (D).



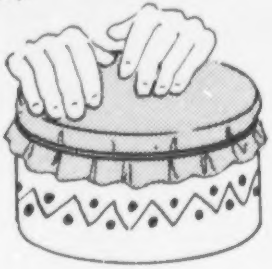
(D)

5. Decorate cylinder with watercolors, felt pens, or acrylic paint, depending on the drumhead (E).



6. Test the sound with a finger or eraser end of a pencil. To get a better tone from cloth, add coats of diluted glue.

7. Play with fingers, palm of hand, or drumsticks (F).



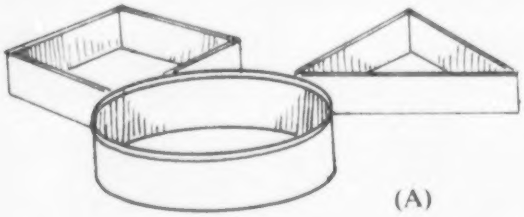
Tambourines

Materials:

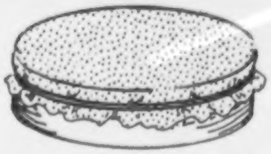
- tambourine base - a hoop of any stiff material or other shape as pictured, or the bottom section of a plastic bottle, approximately 6 to 8 inches in diameter (A)
- tambourine cover - any material mentioned above for drumhead (B)
- metal bottle caps, beads
- nail to punch holes in caps and base so caps can be attached
- thin wire to fasten caps to base

Directions:

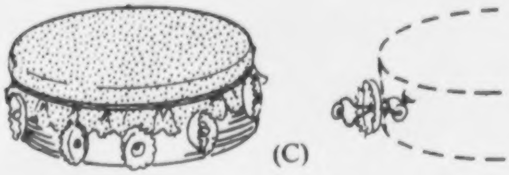
1. Smooth the base if necessary. Use sandpaper on wood, trim plastic, file metal.



2. Remove the lining from the bottle caps. Punch a hole with a nail in center of each top.



3. Punch holes in the base of the tambourine. Attach the bottle tops with thin wire by threading wire through bead, bottle cap, tambourine, and second bead. Twist wires and bend sharp wires upward (C).



Note: A discarded pan lid or small pie tin also can be used as a base. Small sleigh bells, washers, or any small metal objects can be used in place of bottle tops.

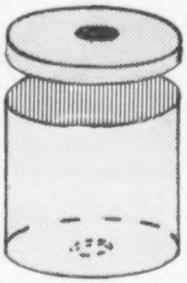
Maracas

Materials:

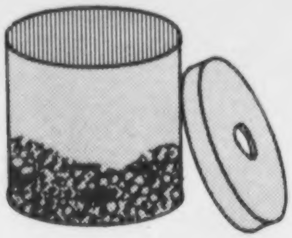
- containers that can be sealed and easily shaken - bandage cans, plastic containers with lids, small boxes
- pebbles, anything that will rattle when shook
- wooden dowel rod
- tape
- screw eyes for ends of handles so maracas can be hung

Directions:

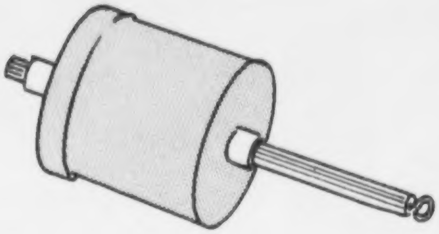
1. Punch hole through center of the top and bottom of each container (A).



2. Put pebbles in container (B).



3. Push wooden dowel through the holes. Wrap tape around the dowel to hold handle in place. Decorate (C).



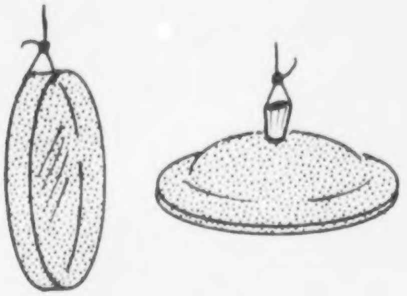
Gong

Materials:

- pot lid - stainless steel or other round metal object
- string or other flexible material to permit gong to swing loose
- metal spoon or similar object to strike the gong

Directions:

1. Tie string around knob of pot lid.
2. Hang pot lid or hold it by the string.
3. Strike pot lid with spoon.



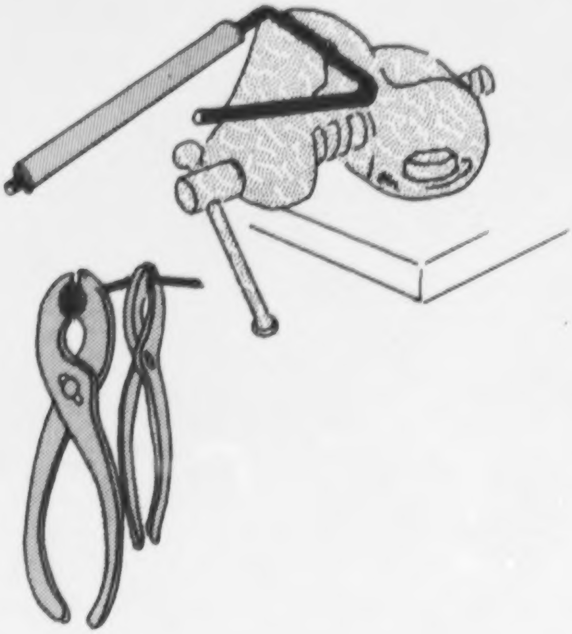
Triangle

Materials:

- 3/8-inch metal curtain rod, or 6-penny or larger nail
- vise, pliers, pipe
- sturdy sting

Directions:

1. Bend the rod by holding it in a vise and using a short pipe, as shown. Use pliers to bend nail.
2. Hang triangle with string.



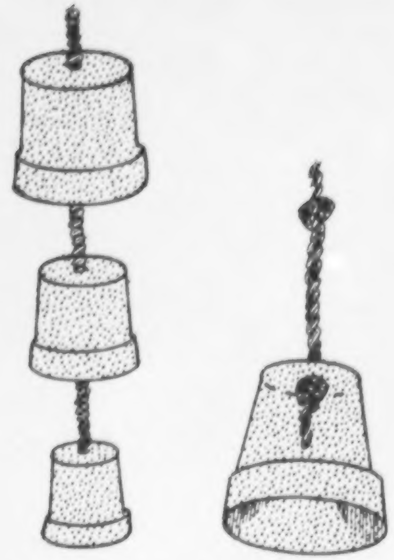
Flowerpot Bells

Materials:

- clay flower pots of different sizes
- rope

Directions:

1. Knot rope and slip through holes in flower pots, as shown.
2. Strike with any soft item such as cork on the end of a stick.
3. Hang flower pots individually or in groups.

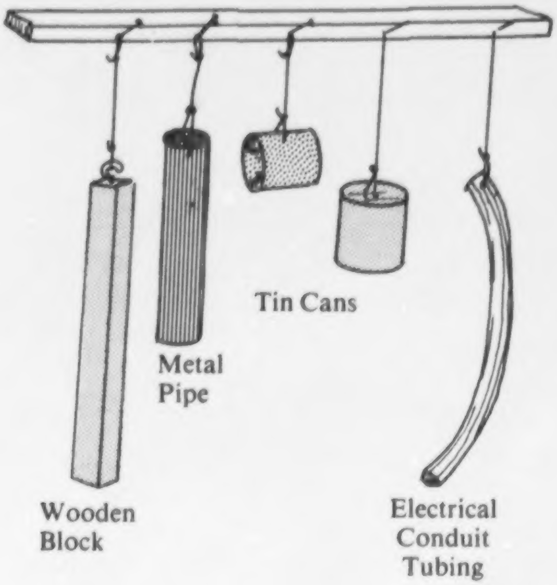


Percussion Corner

To make a good sound, percussion instruments must be hung to ring when hit. An instrument may be played by itself or a child might play all the instruments and be a one-person band.

Make a hanging device by partially inserting small nails at 6-inch intervals on the side of a narrow board, 6-8 feet long. Mount on the wall or between chairs.

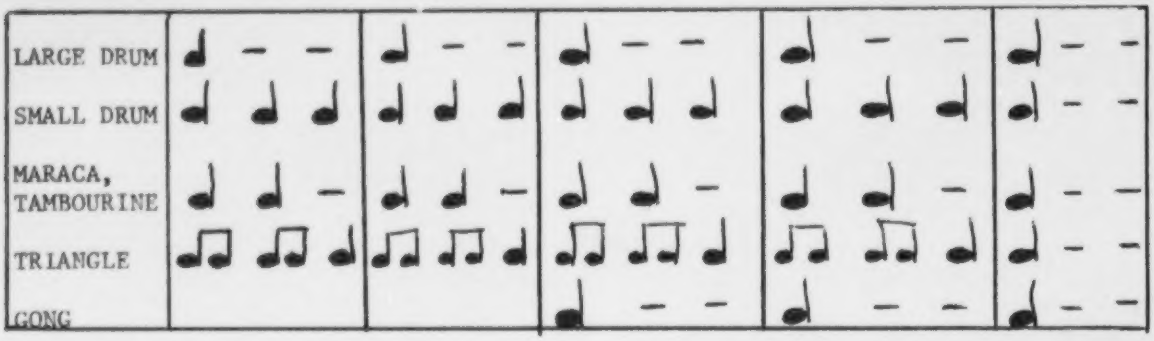
Note: Instruments attached to string can be stored by wrapping the string around the instrument and taping the end of the string to the instrument.



Fun Things To Do With Homemade Instruments

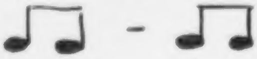
Children can learn to play melodies with homemade instruments. This requires precise tuning. For example, flowerpot bells would have to be labeled according to pitch. Each child might be responsible for one pitch. Playing a whole melody might be too much for one child.

Children can play rhythms easier than melodies. Develop a rhythm group with 3 or 4 members using different instruments. Write out rhythm patterns like those in the "Reading and Writing Music" section. Each player has a rhythmic pattern to follow. Here is an example:



Rhythm patterns can be written for any song.

Children can send messages with the instruments, each rhythm having a secret meaning:



Come quick! Help us!

There might be three groups in a band: rhythm, wind, and string. The rhythm group would make a steady beat. The wind and string groups would play melody. Music for each group is written and each group practices separately. Then all play together.

If any of the children know how to play the guitar or piano, ask them to join in.

Wind Instruments

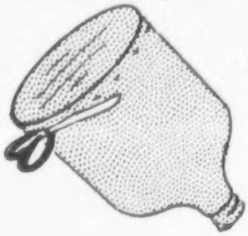
Bugle

Materials:

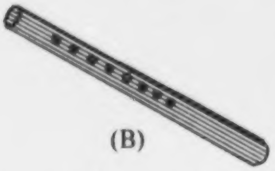
- a hollow object about 1 foot long with an inside diameter of ½ inch — reed, bamboo, rubber hose, or metal pipe
- masking tape
- half-gallon plastic bottle with ½-inch mouth to use as sound-amplifier

Directions:

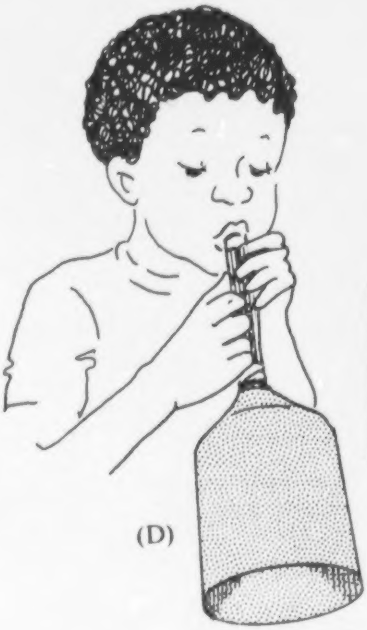
1. Cut bottom from plastic bottle (A).

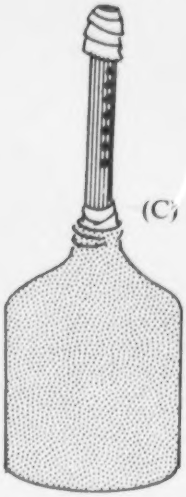


2. Drill finger holes in the reed as illustrated (B).



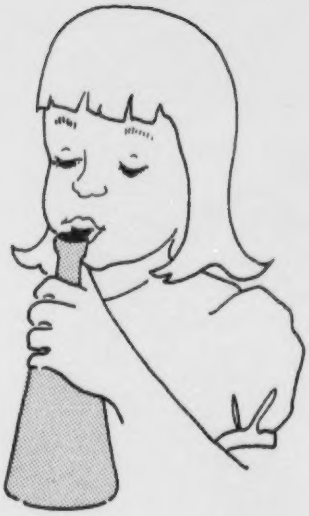
3. Wrap tape around one end of reed to form a mouthpiece (C).
4. Put enough tape around the reed so that it fits snugly into the mouth of the bottle (C).
5. Press lips firmly against mouthpiece and blow. Vibrate lips to make sound. Cover and uncover holes with fingers to play different notes (D).





Bottles

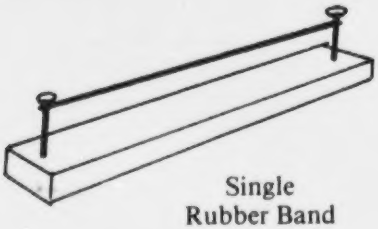
Blowing across the tops of lidless bottles of varying sizes makes different sounds. For example, blowing across a tall, wide-mouthed bottle makes a bass sound.



String Instruments

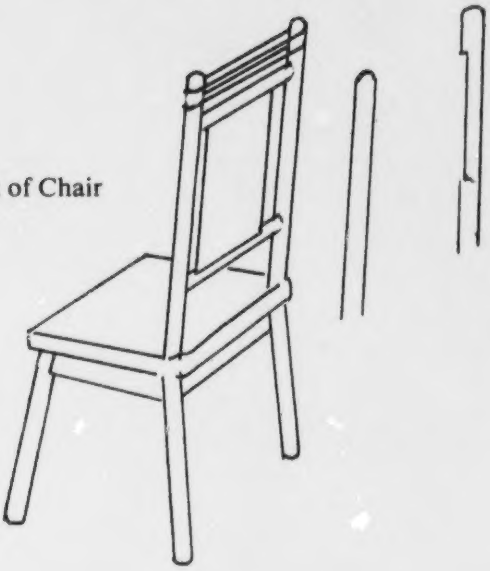
Using Rubber Bands

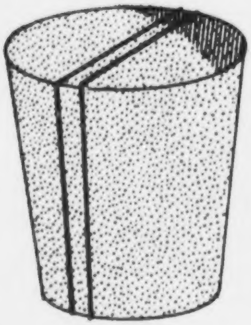
Children can make string instruments with rubber bands.



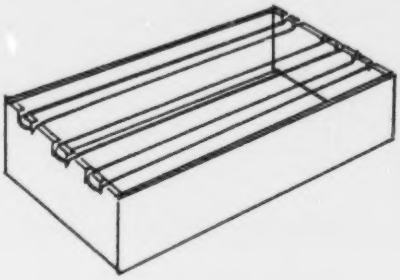
Single
Rubber Band

Back of Chair





Waste Basket



Box with pairs of slits cut in ends. Loop rubber bands of different sizes in the slits.

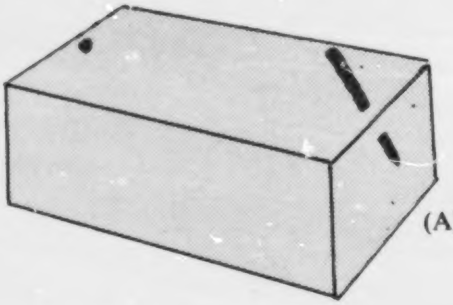
Box Harp

Materials:

- cardboard box with lid, approximately 18 inches by 10 inches by 8 inches
- fishing line to hold from 10 to 20 pounds
- pencil, tape, or glue
- 2 popsicle sticks
- ballpoint pen for punching

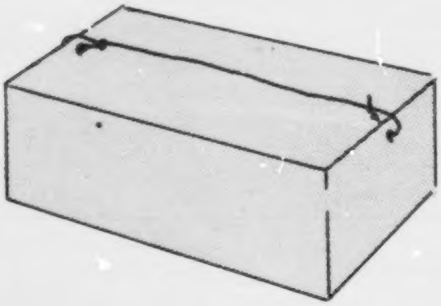
Directions:

1. Glue or tape box to close all openings.



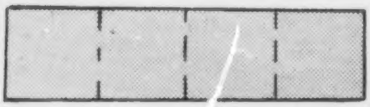
(A)

2. Cut a piece of line twice as long as box.
3. Punch pen through top end of box as shown (A). Repeat at other end of box.

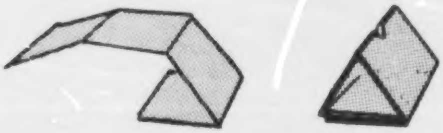


(B)

4. Thread line through hole at one end of box and tie (B). Stretch line across top of box to other end, thread through holes, and tie. Leave a little slack for bridge to fit underneath.
5. For the bridge, cut piece of cardboard about an inch wide and 4 inches long. Measure and mark in fourths, as shown (C). Score along lines with blunt knife, bend, and tape together (D). Make a small notch for string to slide over. Place bridge under the string.

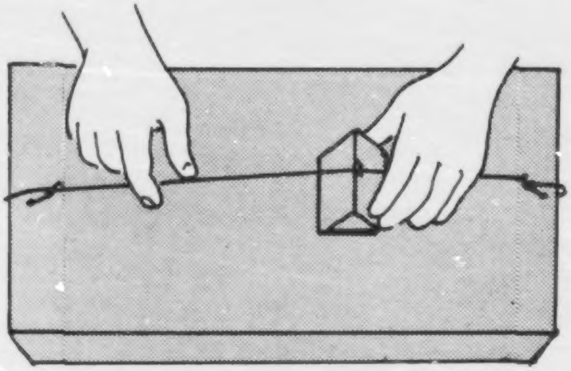


(C)



(D)

6. Pluck string with finger. Move bridge to make different notes (E).



(E)

11. Equipment

A record player, cassette recorder, cassettes, and records are valuable to a music program. Borrow records from the public library or from the children. If cassettes are borrowed, they can be erased, used, erased again, and returned. Ask older brothers and sisters or parents to bring record players and recorders.

Instruments such as guitars, autoharps, harmonicas, and ukeleles may be brought to the center for a day. Older brothers or sisters, parents, or friends might play for the children.

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DAY CARE
for School-agers

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Communication and Creative Dramatics

1. Overview

Listening to Children

In day care, school age children have just finished six hours of school. They often are ready to talk, *if* there is the opportunity.

A child's experiences may have been happy, frustrating, confusing, irritating, exciting. A caring listener can encourage a child to give words to feelings, thus expressing emotions so they can be seen, understood, and dealt with. "Well, how'd it go for you today?" The child may welcome such an invitation to talk about the day's experiences.

The day care teacher is a friendly adult who doesn't give grades, doesn't keep records, doesn't hold emotionally-charged expectations for the child's academic or social behavior. Such an uncritical relationship may be perfect for open communication.

The day care teacher may be one of the few people the child sees daily, who takes time to listen, who isn't tied to a rigid time frame.

A Good Place for Talking

It's not necessary to restrict talking in order to accomplish something.

Provide an environment where children deal with each other and are involved in interesting activities. They will talk and listen in order to get things done.

Question: In each of the following situations, what has happened?

Sarah wanted to make a necklace. She talked with a friend, looked in a book to check a picture, and went to the junk box for materials. Then she made the necklace with the help of a friend.

David wanted a cake on his birthday. The children found a recipe, brought ingredients, and baked the cake. David watched them decorate it, carefully adding his name.

Somebody read an experience story from *Readers Digest* to the children. Hoping to make $35, Joe decided to write one and send it in.

For Easter, a group decided to write a script for a rabbit T.V. show. They wrote it, made puppets, and presented it.

The children were interested in stained glass. They invited Mrs. H. and she accepted. She demonstrated as she talked. The children listened, responded, asked questions, and later wrote thank-you notes.

Question: What happens to children when they have opportunities to: make choices; make decisions; solve problems; interact; seek help; give help; learn by doing; work individually; plan and work with a group; gather materials for a project; be responsible?

Answer to both questions: communication, improved language skills, achievement, feeling good about successes.

The activities in this section require communication. Hopefully, they'll show the value of communication skills.

2. Stories

People, especially children, love to hear and tell stories. A simple object can inspire a story. Say to them, "Close your eyes and hold out your hands. I'm going to give you a surprise object for your story." Give a kernel of corn, a button, a peanut, a scrap of velvet, an old shoe, a potato, anything. If there's a box labelled "Story Starter," the children will contribute to it. Sometimes the children might make up different stories about the same object.

One child or several could take an envelope containing six or seven pictures and try to get them all into one story. The more unrelated the pictures, the more imaginative (and maybe funny) the story. Children can supply the pictures too, using old magazines, scissors, and envelopes.

Mention to the children the subject of a newspaper story (house on fire, for instance). Let the children act out a made-up story about the subject, then compare their story to the newspaper story.

Show pictures of people displaying emotions. The children could describe these emotions and think of reasons for them and what might cause them to change.

Let the children read sentences and underline words which refer to emotions (Example: "He wants somebody to *love* him.")

Magazines, newspapers, and calendars have lots of pictures. Start a collection at the day care center. Staff, children, and parents can contribute. Get a cardboard box and folders. (See storage section for filing the pictures. For laminating them, see the community resources section.) Develop a system for filing which includes people, animals, places, ways to travel, food, etc.

"Round robin" stories are usually winners. Everyone can participate. Someone starts off with a few sentences, enough to get a hero into a scary situation ("Suddenly rising from behind the hill, she saw a scary . . ."), and then the next person continues. (Round robin ghost stories told on rainy days with the light off can be especially fun). A variation is to establish a pattern to follow. One such pattern comes from *Kids Magazine:* the "Fortunately/Unfortunately" story. Here's an example of what one pair of children did with this basic idea.

> Fortunately I saw a gumball machine.
> Unfortunately I had no money.
> Fortunately I found a nickel.
> Unfortunately the machine only took pennies.
> Fortunately my friend had some pennies.
> Unfortunately he wanted half the gum.
> Fortunately you can't split five pieces of gum.
> Unfortunately he thought of a way.
> Fortunately he dropped his gum in the gutter.
> Unfortunately he didn't think it was fair and wanted some of mine.
> Fortunately I was already chewing mine.
> Unfortunately he had a big mean dog.
> Fortunately his mother came along.
> Unfortunately she didn't recognize me.
> Fortunately my sister did recognize me.
> Unfortunately she pretended she didn't.
> Fortunately the dog ran after her.
> Unfortunately my friend called his dog.
> Fortunately it didn't come.
> Unfortunately he threatened to smash my face in later.
> Fortunately he ran away after his dog.

File "story starters" on a pack of 3 by 5 cards, one story starter per card. ("I should have stayed in bed!" "If I hadn't seen it with my own eyes, I wouldn't have believed it!") Have blank cards for new ideas.

Another good idea is to tell a story to a certain point and let others make up endings.

The children also might make up a story about a local hero. They might borrow records, ballads, or story songs from the public library.

Some children are interested in myths and legends from other cultures. These often explain the origins of something. Children might make up their own myths (e.g. how the leopard got its spots, why people are different colors, why they speak different languages, why pigs have curly tails, why some people are bald, etc.). The local librarian probably has records of Rudyard Kipling's *Just So Stories* and others by Sterling Holloway.

Comic strips, and comic books also are good story starters because school-agers like them so much. It's fun to make up new dialogue for comics or make up new comics altogether. *Kids Magazine* is a good source. But all that's needed are comic books or newspaper funnies, blank sheets of paper, and drawing and writing utensils.

More story activities:

- Make up a story for private enjoyment.
- Tell a story to a friend.
- Act it out, maybe using puppets.
- Tell a story on a tape recorder.
- Write a story for others to read.

3. Books

Uses:

Read Them

They Were Strong and Good, by Robert Lawson (The Viking Press, New York).

The Jazz Man, by Mary Hays Week. Woodcuts by Ann Grigalconi (Antheneum, New York).

An All Us Come Across the Water, by Lillian Clifton (Holt, Rinehart, Winston).

Act Them Out

Gilberto and the Wind, by Marie Hall Ets (Viking Press, New York).

The Biggest Bear, by Lyrd Ward (Houghton Mifflin Co., Boston).

Sing Along

Sing a Song for Sixpence, by Randolph Caldecott (Frederick Warne & Co. Ltd., New York).

Three Blind Mice, by Ivimey & Corbould (F. Warne).

Read in Chorus

Wynken, Blynken and Nod, by Field Cooney (Farrah, Straus).

Millions of Cats, by Wanda Gag (Coward, McCann).

Go For A Walk

Grandfather and I, by Helen Buckley (Lothrop, Lee & Shepard).

Let's Go Outdoors, by Harriet Huntington (Doubleday).

Crow Boy, by Fara Yashima (The Viking Press, New York).

Dance

Sometimes I Dance Mountains, by Byrd Baylor (The John Day Co., New York).

Daisy Discovers Dance, by Laurie Jo Lambie (The John Day Co., New York).

Expand Vocabulary

Hosie's Alphabet, by Leonard Baskin. Words by Hosea Tobias, Lisa Baskin (Viking Press, New York) (Such as: *"L the Omnivorous Swarming Locust", "S a Gangling Entangling Spider").*

Be Alone

The Snowy Day, by Ezra Jack Keats (The Viking Press, New York).

Learn About Vocations

What It's Like to Be a Teacher, by Arthur Shay (Reilly & Lee Book Co., Chicago).

What It's Like to Be a Doctor, by Arthur Shay (Reilly & Lee Book Co., Chicago).

Also, baker, bus driver, carpenter.

Relax

Yoga for Children, by Enene Cheki Hanly and Ruth Richards (The Babbs-Merrill Co., Inc., New York).

Magazines for children:

Boys Life (Boy Scouts of America. North Brunswick, N.J.).

Children's Digest (Parents Magazine, Bergenfield, N.J.).

Highlights for Children (Highlights for Children, Inc., P.O. Box 269, Columbus, Ohio).

Jack & Jill (P.O. Box 276, Indianapolis, Ind.).

Daisy (Daisy Subscription Service, P.O. Box 2466 Boulder, Colo.)

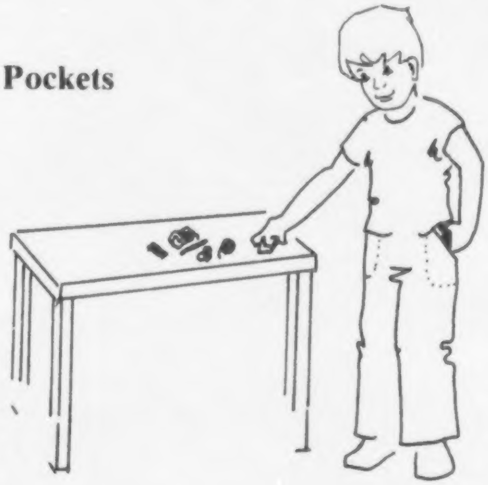
Texas Parks and Wildlife (Austin, Tex.).

National Geographic World 17th and Main Street, N.W., Washington, D.C.).

4. Newspapers

- Read weather forecast in yesterday's paper. Was it accurate?
- Cut out advertisements from the paper. In a "pretend" game, get others to buy what is for sale.
- Find an item in the classified section to buy. Call a child who is pretending to be the owner.
- Display pictures from newspaper, keeping the description secret. Children write descriptions and compare them with the original.
- Read an article without the headline. Children write headlines.
- Display headlines only. Children write the story.
- "Reporters" write news stories of center's activities for a week. Publish a weekly newspaper. Display copies to read. Make a tape recording of the paper being read aloud so children may listen to others read if they wish.
- Make a grocery list from specials advertised by grocery stores. Look for the best buys.
- Children write an advertisement for something they'd like to trade. On "trade day," children may bring and trade their stuff.
- Study the T.V. Guide. Select and watch a program.
- Display a picture of a person, deleting the name (e.g. Barbara Jordan). Children discuss and ask questions at home and school and make guesses. In several days, label the picture.
- Read an article. Discuss what could have happened if someone had done something differently.
- Invite a news reporter to the center.
- Write up a special event and send it to a local paper.
- Use comics. Read them. Read them to a friend. Make them up. Act them out. Cut them apart and allow children to put them back in order.
- Read and write letters to the editor of the local paper.
- Look for things that are free. List them (e.g. boat races, walk along a lake, visit to an old building that has been restored, look at new cars in showrooms, window shop, hear a bell choir, visit a garden center, look for signs of spring). Display the list of free things on the bulletin board. Make copies and send the list to parents.

5. Pockets



Almost anything may be found in a child's pockets. It may seem like junk, but the child cares enough to keep it. And a good way to deal with language is talking about what the child cares about.

There are many things to do with pockets. Begin by having the children empty their pockets. Conversation will probably take off without help: "Hey, where d'ja find that?" "Wanna trade?" "I'll give you my ______ for your ______." Consider moving the conversation in interesting directions: "It's amazing what you can tell about a person from just looking at what's in her pocket. What can you tell about Jan from what's in her pocket? Make some guesses."

If the children are on a walk, suggest that each one find a secret item to put in a pocket. When back at the center, the children can show their stuff to each other. The surprise will be fun. If they know each other well, they may be able to predict what others have. Or each child may want to give clues and see if others can guess. The pocket treasure might be the beginning of a scrapbook or display, to be added to after each walk. Or the activity could be the beginning of a free verse poem written on newsprint with a magic marker:

On a Walk Today

I found a smooth white pebble and a bright spot
in a patch of mud. (Jamie)
I found some moss that feels soft when I rub it
on my cheek. (Tim)
I found an orange and black speckled butterfly
wing. (Celia)
And I found a baby leaf, the size of my thumb
nail. (Jody)

Children also might pocket a secret treasure found on the way to school or at home, that someone has given them that's for trading, or about which there's a story.

A bulletin board or table top can be a center for pocket activities. Add a question like "What can you find in a pocket?"

Pockets of cloth may be stapled or taped to the bulletin board, as may pockets cut from old clothes. The children may want to make a giant patchwork pocket where various surprises are hidden.

Various games are possible:

* Each child can be responsible for sneaking an object into a particular pocket. Then others try to guess what it is by feeling the object through the cloth.

* Pretend the pockets belong to someone famous. Everyone selects an appropriate object (or writes the object's name on a slip of paper) to put in the pocket. For instance, the pockets may belong to Fonzie or Big Bird. Others might try to guess whose pocket it is by what's in it.

* The children individually or with others can make up stories based on what's in a pocket. It might be suggested that stories include as many items as possible, or include a minimum number. After making up stories, the children could tell them to others, act them out, or tape them and play the tape with or without children acting out the stories simultaneously.

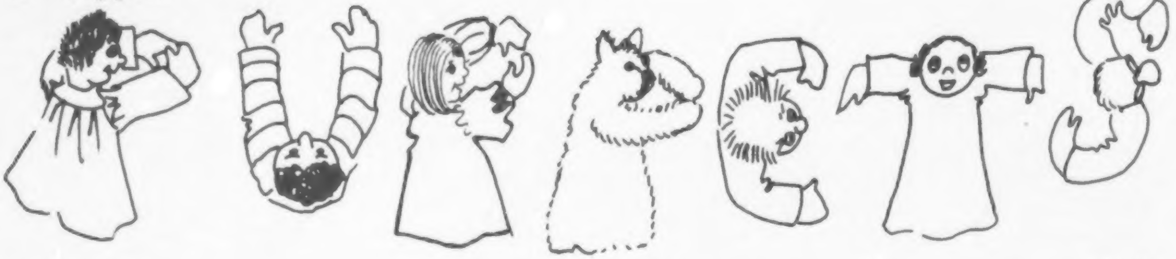
* A carpenter's apron offers lots of pockets and possibilities. Some children might want to write name tags and pin one to each pocket, then think up surprises to put in each other's pockets — something found on the playground, a picture from an old magazine, a written riddle or joke, a letter, a written promise to do someone a favor. Children will put surprises in other children's pockets and take any surprises there might be from their own pocket. (Consider making rules so that no one's pocket stays empty. (For example, "You can't take anything out of your own pocket until you've put a surprise into someone else's pocket.") A teacher might wear the apron during the hunt.

* For a scavenger hunt involving two teams, make two carpenter's aprons. Some children can write down items to find, one per slip of paper. One person on each team wears an apron. One slip of paper goes into each pocket for each team. When a group finds something, they put it in the appropriate pocket. The winning team is the first team to fill all its pockets.

* *Katy No-Pocket* is an all-time favorite for young children, and an ideal story for an older child to read to younger children. Someone might read it onto cassette tape so younger children can listen and look at the book whenever they want.

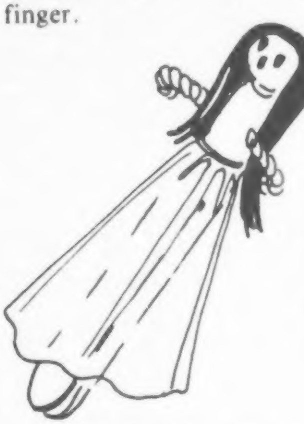
Lots of experiences are possible with pockets. Other things would work as well (e.g. shoes or buttons). And language possibilities are endless when children are involved in interesting experiences.

6. Puppets

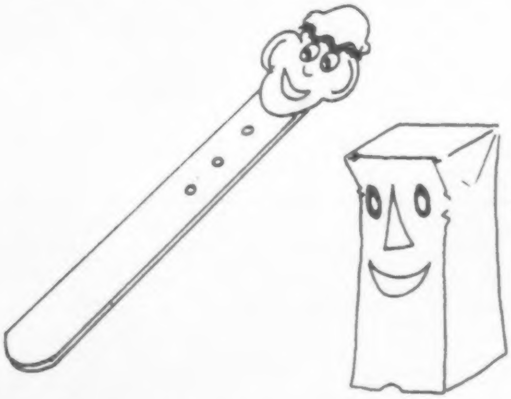


Making Puppets

The simplest puppet is a face drawn on the thumb. Only slightly more complex is a paper cylinder with a face. The paper fits over a finger.



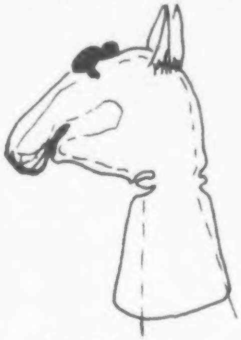
For clothespin puppets, draw the face and add yarn hair, clothes, or whatever.



For popsicle stick puppets, draw faces on paper, cut them out, and paste or tape them onto the popsicle stick.

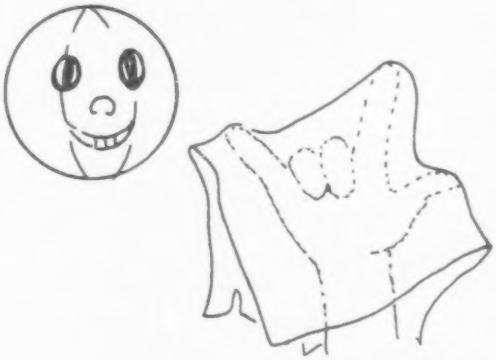
Paper bag puppets are fun too, and make simple hand puppets. Decorate them with yarn, crayons, paper and scraps of fabric to make faces, arms, legs, hair, and clothes.

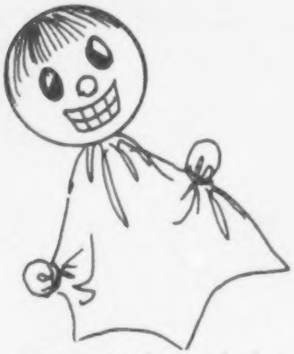
Socks make good hand puppets, especially animals or snakes. For the mouth, tuck part of the sock between thumb and fingers. Sew on eyes and ears. Use yarn for mane and tail.



Ball and handkerchief puppets may be made with a tennis ball, handkerchief, napkin or square of fabric, and two rubber bands.

Cut a hole in the tennis ball a bit larger than an index finger. Draw face and hair on ball and color with felt markers or crayons. Make the puppet's body by draping a colorful cloth handkerchief or napkin over a hand. Insert the index finger into the tennis ball head. The thumb and middle finger are the puppet's arms. The other two fingers are folded into the palm. Slip a loose-fitting rubberband over the cloth around the thumb and another rubber band over the middle finger to distinguish the puppet's hands.





Hand puppets made from cloth offer many creative possibilities for older children who are interested in simple sewing. Most complex are paper mache puppets.

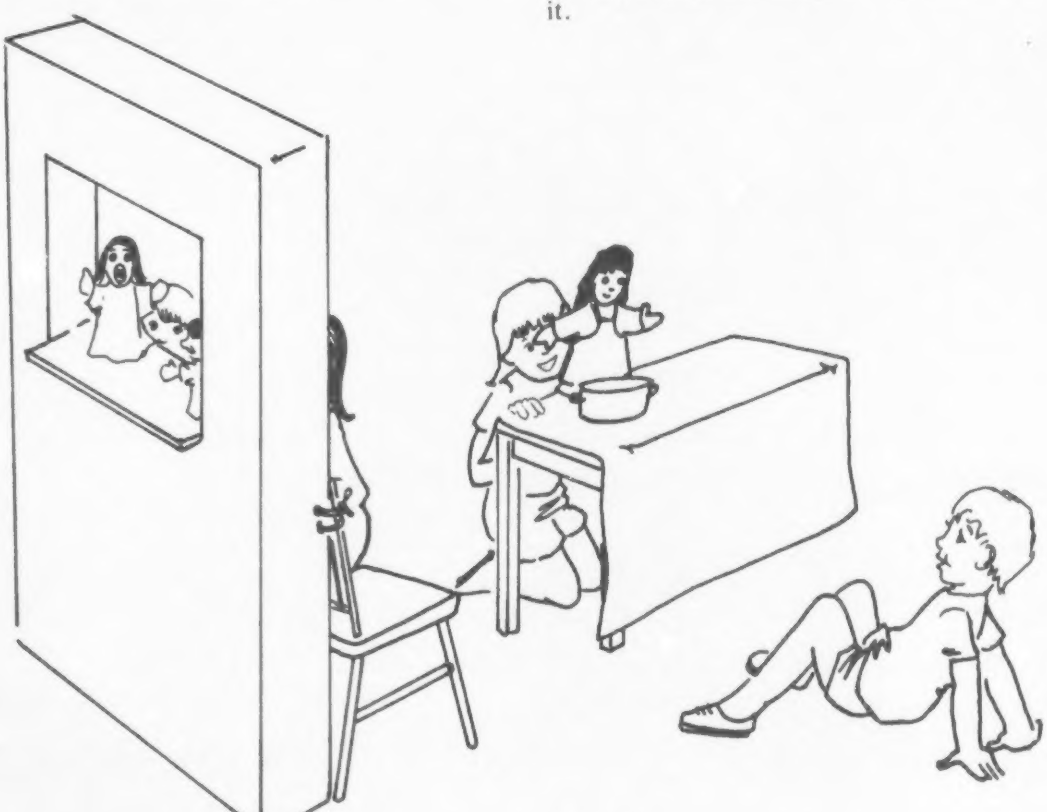
The public library has books about making puppets.

Language figures importantly in making puppets. It'll be necessary to collect materials - ask parents, friends, and neighbors for bits of yarn, old grocery sacks, buttons, cloth scraps, etc. Do cooperative planning: Who's going to bring what? Who'll make which puppets? The children can help each other. All this plus the talking that naturally occurs when children work together: "What kind of hair do you think this fellow should have?" "I brought some pretty sequins that would make a neat crown for your queen puppet," etc.

Puppet Shows

Making puppets is only a beginning. The children may want to put on a puppet show. (Some of the suggestions in the Creative Dramatics section will apply to puppets, too.) They may create situations. For little children this can be as simple as "Pretend we see a monster coming around the corner, but he turns out to be the Jolly Green Giant."

Older children might want to write scenes on slips of paper and start a collection of scenes to be used by others. Often children will start puppets interacting and characters and situations will evolve spontaneously. They may act out a familiar story, as written or with surprise changes. Another variation is to have puppets act out a story while another child reads or tells it.



7. Jump Ropes

Besides jumping, what else can be done with jump ropes?

Children like jump rope rhymes. Suggest that they collect some: "Grownups used to jump rope to rhymes. Ask if they remember some." The children will be surprised to learn that many rhymes have been used for generations. What changes *have* occurred and what may have been the reasons?

Collect the rhymes in a booklet, teach them to each other, record them on tape, exchange the tape or booklet with children from another school age center, or get together with children from another center to teach each other new rhymes. Roger Abrahams' book, *Jump Rope Rhymes Dictionary,* could be a helpful resource after the children have collected rhymes.

The greater the children's background differences, the better. All cultures jump rope and make up rhymes that can be shared with others.

Go to the public library for books about jump rope rhymes and games from other cultures. Interest quickly will lead to interest in other playground activities such as hand-clap games and song-and-dance games.

A jump rope can involve children in many experiences, all calling for verbal interaction. Whether learning rhymes from adult friends, recording rhymes in writing or on tape to make them available to others, teaching them to other children, or searching through books for them, children will be learning and using language.

8. Bulletin Boards

Uses

* communicate ideas
* express feelings
* make requests
* plan and evaluate activities
* present issues
* make the center more attractive
* help set a holiday mood
* provoke thought
* stimulate response
* introduce new activities
* give children a chance to set standards

Bulletin Board Arrangements

* informal balancing usually more effective
* emphasis achieved with bright color, large words, unusual textures or shapes
* effective use of space to prevent clutter
* single idea recognizable at a glance
* material reads from left to right and at eye level
* for contrast, combining bright and dull colors or dark and light tones
* for unity, repetition in color, texture, shape, and size
* surprising, catchy word combinations and questions

Content

* a backdrop to staple on the bulletin board, such as newspaper, comics, shelf paper, wallpaper, decorated paper, blotters, fabric scraps
* letters and numbers drawn on cardboard and cut out with an exacto knife (save cut-out forms and board)
* letter cut from corrugated cardboard textiles, carpets, cork sheds, blotters, textured paper
* rope, string, cord, yarn, raffia, wire, or leather strips formed and pinned to make words and phrases.
* map pins with colored beads placed side by side to form letters
* pictures (see section on picture file) from:
  - magazines
  - calendars
  - book jackets
  - grocery displays
  - photographs
  - wrapping paper

- picture postcards
- greeting cards
- newspapers
- art work
- books beyond repair
- catalogs
- record covers
- arts and crafts materials
- mounting materials, such as rubber cement, push pins, map pins, stapler if there's close supervision

Ideas

Summer fun: Collect information on local summer programs and draw pictures to illustrate them.

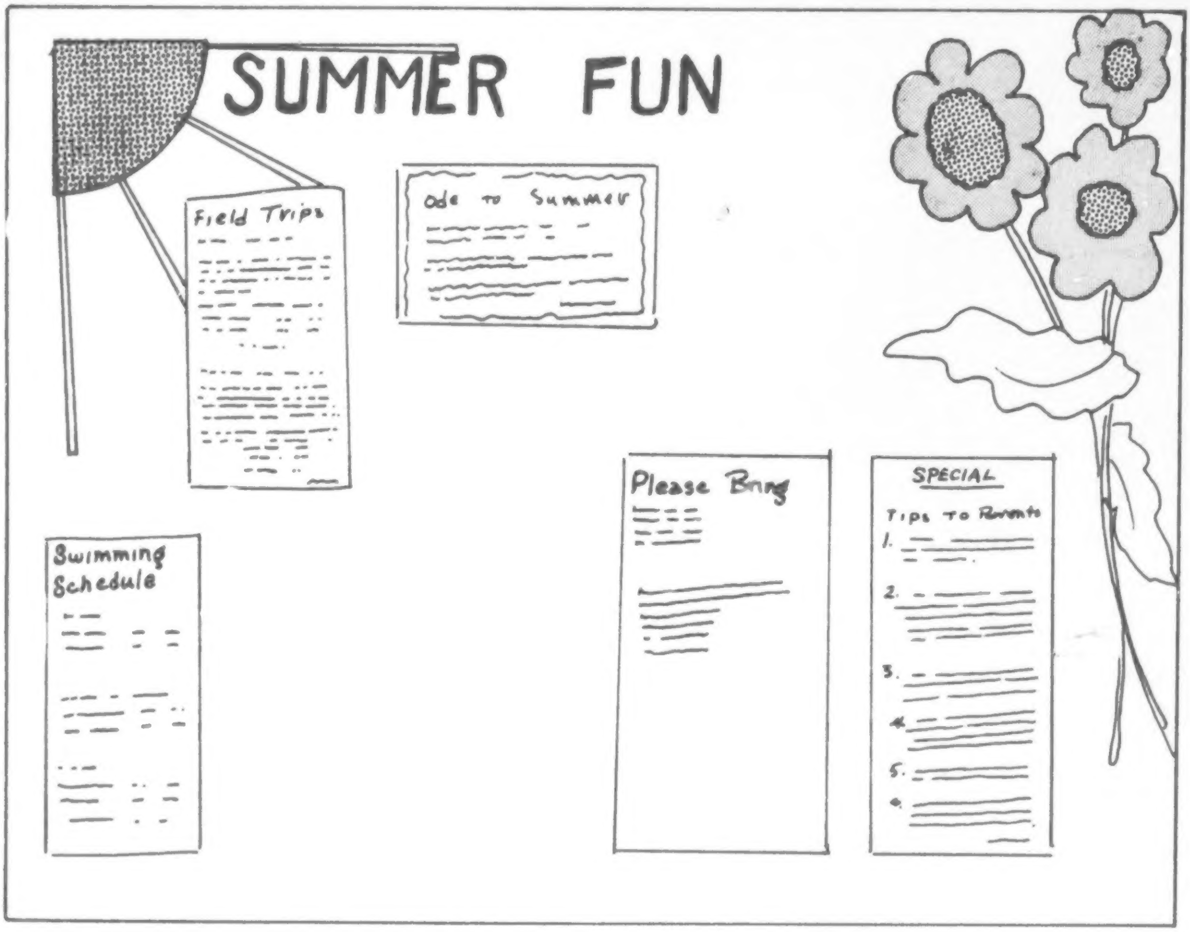
Nature walk: Display different kinds of leaves, wild flowers, fossils, and poems the children composed after the walk.

Things needed at the center: For instance, show pictures of old jewelry, purses, and props for creative dramatics.

Favorite recipes: Show pictures and recipes of foods the children have enjoyed at the center.

Messages to Parents

Post an invitation for parents to come to the center on Saturday morning and help plant shrubs, trees, and bulbs donated by a local nursery. If the children want, invite whole families and ask that they bring luncheon foods.


SUMMER FUN
Field Trips
Ode to Summer
Swimming Schedule
Please Bring
SPECIAL
Tips to Parents
1.
2.
3.
4.
5.
6.

9. Codes and Ciphers

Around the age of 9 or 10, children usually become interested in special friends, clubs, and secrets. Secret codes, languages, and invisible ink are popular. These activities may call for a knowledge of science, language, and logical thinking, plus concentration and hard work. Secret messages, however, are best when studied informally and enjoyed with friends.

Codes

A code is a way to write in which each word is represented by a secret code word, code number, or symbol. Examples:

for the word TROOPS . . . . use WHITE
for the word GUNS . . . . . . use GREEN
for the word CANNON . . . use YELLOW
for the word BRIDGE . . . . use PURPLE
for the word ORDER . . . . . use BLACK
for the word TO . . . . use PINK

The army commander sends out a message that says BLACK, WHITE, YELLOW, PINK, PURPLE. Only someone who knows the code would understand the message: "Order TROOPS and CANNON to BRIDGE." Since no one can remember all the code words for every message, at least two code books are necessary: one for the writer to *encode* the message and another one for the reader to *decode* it.

Each copy of the code sheet has two parts. In the first part, for encoding, list in alphabetical order the English words and phrases to be used and the code for them.

CAN YOU COME	ARTOG
MEET ME	BELOG
TRY TO DO IT	ALMER
THE COAST IS CLEAR	BARLOW
WAIT FOR ME	ALSOR

For decoding, reverse the order so that the code words are in alphabetical order.

ALMER	TRY TO DO IT
ALSOR	WAIT FOR ME
	CAN YOU COME
ARTOG	THE COAST IS CLEAR
BARLOW	
BELOG	MEET ME

Ciphers

A cipher is a system in which every letter has a secret symbol. Here is an alphabet cipher that is easy to remember because it uses numbers for letters.

A 1
B 2
C 3
D 4
E 5
etc.

To make a cipher harder to "break," reverse the order of the numbers so that A is represented by 26 and Z by 1. Another possibility is to match A with a number other than 1, so the code would look like this:

A 5
B 6
C 7
D 8
E 9

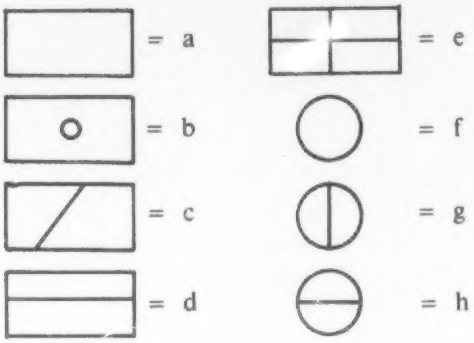
Or, one letter can be substituted for another to make a cipher. Move ahead one letter:

A is B
B is C
D is E etc.

Or move ahead two letters

A is C
B is D
C is E etc.

Any substitution will work. Pick up a system that's easy to remember to use. Shapes work well:



Being able to use a code well takes lots of practice. Fortunately, practicing is fun. Practice alone or with a friend. Encode a message for a friend to decode and vice versa. Have races to see how many words can be encoded or decoded in three or four minutes. In scoring, substract for every mistake.

Graph paper ruled in ¼-inch squares is best but any ruled paper will do. Use sharp pencils with medium-hard lead. Use capital letters.

Print each one large and clearly. Five words to a line are enough. Don't crowd what's written.

To encode a message, copy it in capital letters five words to the line. If more than one line is needed, skip several lines before continuing. Write each code letter beneath each letter in the message.

MEET	ME	AT	THE
15-5-5-20	13-5	1-20	20-8-5

FOUNTAIN	AT	TWO
6-15-21-14-20-1-9-14	1-20	20-23-15

After encoding the message, it's good practice to arrange the code into groups that are five units long. This prevents someone from guessing the message from the length of the words. If the last group has less than five letters, add meaningless letters (called "nulls") to fill up space.

13-5-5-20-13 5-1-20-20-8 5-4-18-9-14
11-9-14-7-6 15-21-14-20-1 9-14-1-20-20
23-15-1-2-3

To decode a message, reverse the process. Copy the message onto squared or ruled paper, five groups to the line with spaces between the lines. Then, using a code book or memory, decode and write the letters below the numbers. When the message is decoded, break up the five-letter groups into correct English.

Here is an example, a reply to the last message:

19-15-18-18-2
5 2-21-20-9-23 9-12-12-2-5
SORRY BUTIW ILLBE

12-1-20-5
LATE

Practice messages using this system to learn the code well.

Invisible Inks

One of the best ways to send a secret message is to write it in invisible ink. The paper will appear blank. The friend who knows about the invisible ink heats the paper to make the writing appear.

Lemon juice ink - Squeeze the juice of half a lemon into a small dish or glass. It makes an excellent invisible ink. Orange juice ink and grapefruit ink also can be used.

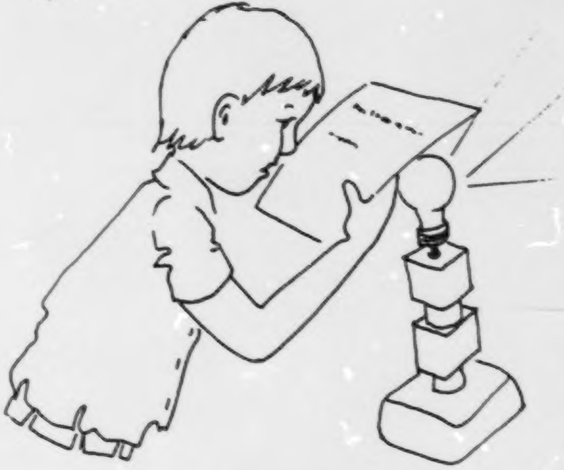
Sugar water ink - Put half a teaspoon of sugar into half a glass of water and stir until the sugar is completely dissolved.

Honey water ink - Put half a teaspoonful of honey into half a glass of water and stir until the honey is dissolved and the water is clear.

Onion juice ink - Peel a small onion, grate it into pulp, and let the pulp stand in a small dish or glass. At the end of several minutes, part of the pulp becomes liquid. This liquid is an excellent invisible ink.

A toothpick will work as a pen.

To see the message, heat the paper over a hot light bulb.



Secret Languages

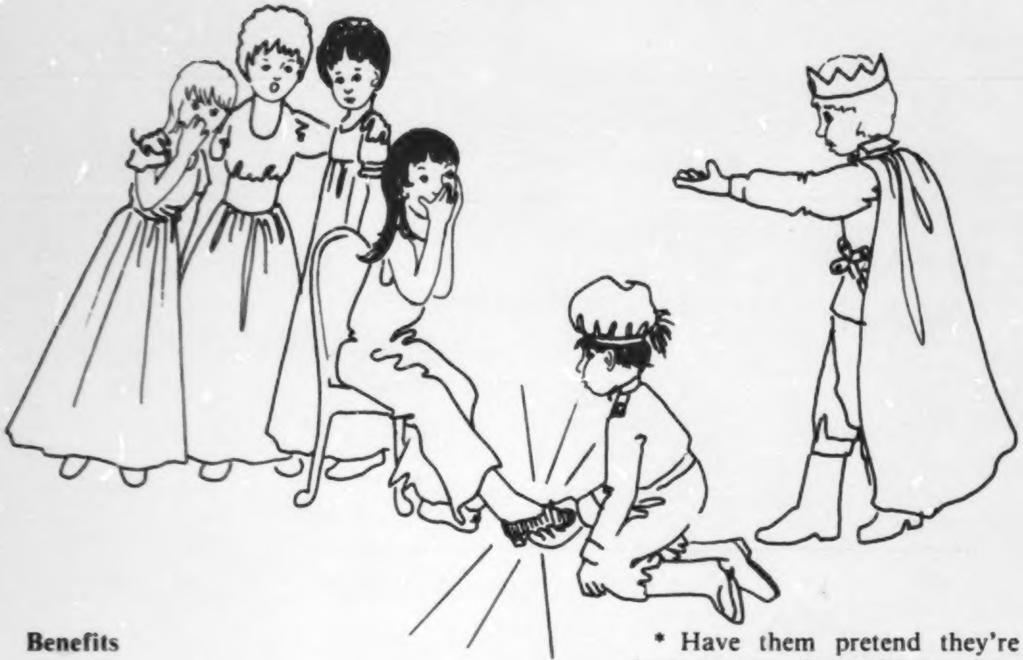
See this section's bibliography for books on secret languages and ideas for codes and ciphers.

10. Creative Dramatics

Introduce the children to two kinds of drama: Children's Theatre and Creative Dramatics.

Children's Theatre consists of formal plays, acted by children or adults, written and performed for children. Lines are memorized. Scenery and costumes are used. It's good to have a director experienced in theatre and disciplined rehearsals.

The second kind of drama is Creative Dramatics, and that's what this section deals with. Creative Dramatics are scenes created without rehearsing, made up as the scene goes along.



Benefits

* Experience in thinking creatively and independently.

* Practice interacting with others.

* Understanding people and relationships. Acting helps children understand what it's like to be someone else.

* Controlled emotional release.

* Self-confidence, poise, and the ability to think quickly and express ideas clearly.

* Appreciation of an art form.

* Fun. This most of all.

To begin, clear part of the room so the children can move around. Or use part of the yard. The children should be relaxed and happy. Encourage them to try new things. Especially encourage the shy ones, and keep louder children from stifling others.

Sensitivity Exercises

These exercises are to release the imagination and help the actor respond to the five senses: seeing, touching, hearing, smelling, and tasting. Each of these accomplishments is necessary for acting.

Here are some exercises. Adults and children can think of others.

* Ask the children to lie on their backs and close their eyes. Encourage them to stretch and relax, breathe deeply and concentrate. Tell them to pretend they are somewhere else. Have them describe the places.

* Have them pretend they're where they don't want to be and have them describe the places.

* Mention a place they all know and ask each to describe the place.

* Ask them one by one to walk across the room as if they were somewhere which required a special kind of walk. Or, whisper a place to each child and see if the others can guess where the child is by how the child moves. (Example: a desert.)

* Have a child pretend to taste several kinds of foods. The others can try to guess the foods. (Are the foods sweet? Sour? Hot? Messy?)

Pantomime

After doing sensitivity exercises for a few days, the children will be ready for pantomime. Pantomime is demonstrating a story by using body movements and not using words.

* Have the group sit or stand in a circle. Pretend to have an invisible object (e.g. a cat, a telescope). Hand it to a child. The child handles it as though it were the make-believe object, then passes it to the next child.

* Hand the invisible object to a child and tell the child to turn it into something else, handle it appropriately, then hand it to the next child. The next child can change it into something else again.

* Imagine simple situations for the children to pantomime.

- a person walking on the moon
- a child gathering wild flowers
- a clerk filing papers

- an athlete exercising

* As the children gain experience, do more complex pantomimes.

- an old man on the street
- a nervous policeman trying out a gun for the first time
- a girl eating something she doesn't like in order to be polite

* Children might do a pantomime as a group.

- a restaurant scene including a waitress, a businessman, a cook, a mother and her children
- circus acts including a strong man, a lion tamer, a trapeze artist, a sword swallower.

Think of other situations for which the children can create characters.

Pantomimes need not be long or complicated. Let the children explore possibilities. When a child can't think of more to do, stop the pantomime and show approval.

After the children are comfortable with pantomime, move on to improvisation.

Improvisation

Improvisation is another way to demonstrate something happening. As in pantomime, there is no rehearsal. Words and actions are used. Dialogue is made up on the spot. It may seem hard at first, but the children will get used to it and enjoy it.

Here are some examples:

* Each child pretends to be an animal, using movement and sound.

* A group pretends they are toys in a store which has closed for the night. The toys come alive and begin to play. There may be a toy soldier, a rag doll, a jack-in-the-box, a teddy bear.

* A group acts like survivors of a plane crash, marooned on an island. Some one can be the captain, a nurse, a doctor, passengers. Questions may help the children imagine the situation: How will the people survive? What is there to eat?

* Here are some situations for two people:

- A private and a sergeant. The private hasn't shined the sergeant's boots properly.
- A child whose dog has been hit by a car. Upon arriving home from school, the child's mother tells what's happened.
- A mouse trying to talk a cat out of eating the mouse.
- A bill collector trying to get somebody to pay up.

Improvisations for two people are especially good. When making them up, keep in mind the following:

* Choose something the children can understand.

* Have a goal for each character.

* The characters might have conflicting goals. Drama has to do with conflict.

* Don't tell the children what to do. Let them make up the action.

Unfinished stories are good to improvise. Find one the children don't know and begin it. Then have them pretend to be the characters and make up an ending.

Creating Plays From Simple Stories

After the children have done pantomimes and improvisations, they may want to act out plays based on stories.

Folk tales, legends, and fables are good material. For younger children, stories should be simple. For older children, characterization can be emphasized more.

The leader presents the story to the group, usually by telling it. The leader already should be familiar with the story, and may have practiced telling it at home in front of a mirror. Choice of words is important - the story should be told in the leader's own words.

The next step is to decide with the group how to act out the story. Here are questions to consider:

- What happens?
- Who are the people in the story?
- What are they like?
- What are they doing when we first meet them?
- Where does the first scene take place?

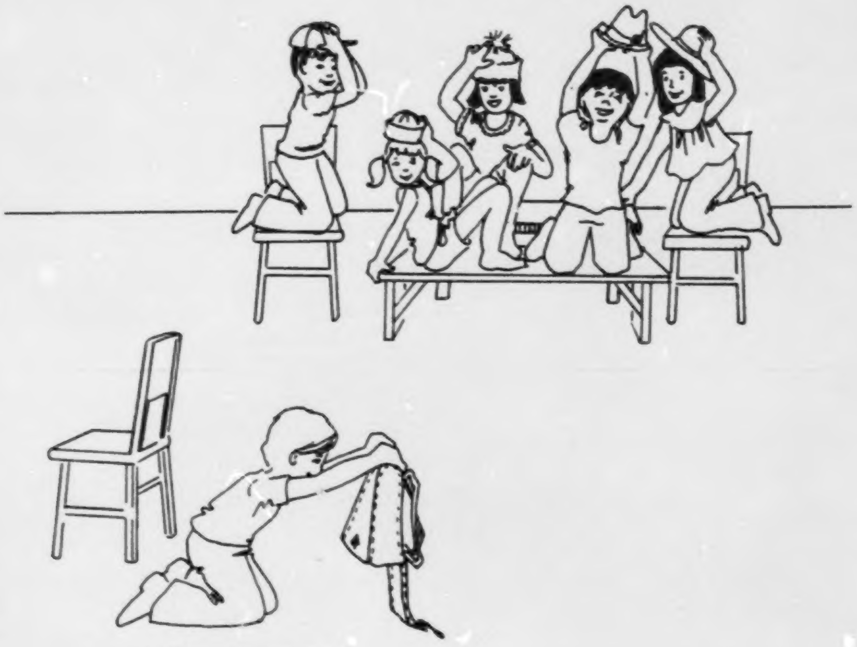
After the discussion, let the children volunteer for parts. For later dramas, suggest parts for children too shy to volunteer.

Arrange an area in the room or outside. Begin each scene as if it were an improvisation. These first rehearsals will be rough and may not work smoothly.

Next, evaluate what's been done. Discuss the following with the group:

- Did the actors demonstrate the story?
- Did they show the right emotions?
- What was good about the opening action?
- What might be done to improve the scene?
- Was anything important left out?
- Were characters represented accurately?

Then act out the story again. The results should be better. With more practice and evaluation, the drama should continue to improve.



A Sample Story

CAPS FOR SALE
An old tale retold by Raymond Benson

There was once an old peddler who sold caps for a living. He was a good and wise man, and was always jolly and happy.

The peddler made and sold all kinds of caps - caps with feathers, caps with bells, caps with brims, caps with fringe. He kept his caps in a large brown pack that he wore on his back as he traveled from village to village singing, "Caps for sale, caps for sale; blue and black and green and red – thousands of caps to wear on your head! Caps for sale, caps for sale!"

One morning the peddler got up and prepared to walk to a nearby village to try and sell his wares. He loaded his pack and went on his way down the road through the forest, singing his song.

Soon he arrived at the village. Many of the villagers had heard him coming, and had gathered in the street to see who he was. There were merchants and weavers, bakers and farmers, mothers and their children, policemen and just plain pedestrians. Even the mayor came out to see what all the fuss was about.

Everyone grabbed the caps the peddler had and all took turns trying them on. This went on for awhile, making the peddler think he would sell a lot of his caps.

But then, the mayor took off the cap he was wearing, shook his head and said, "Nope. This cap isn't for me. What do I need a cap for?" Since everyone else admired the mayor, they went along with what he did and decided that they, too, did not need a cap. The people all took off their caps and gave them back to the peddler. "Come back another day," a farmer told him. So the peddler put his pack on his back again, and started off through the forest on the road home.

Along the way, the peddler grew tried and decided to sit and rest under one of the trees in the huge forest. He took off his pack and sat down in the shade. Before he knew it, he was asleep.

Now it just so happened that in this part of the forest there lived a family of monkeys. They watched the peddler from up in their branches and became very curious. They climbed down the trees and began inspecting the sleeping peddler. Soon they found his pack full of caps and began trying them on. They had a grand time – chittering and chattering at each other as they tried on all the caps. They had so much fun that they began dancing around and chattering even louder. Soon, the noise began to wake the peddler. The monkeys, with the caps still on, quickly scampered up the trees.

The peddler got up and stretched, not realizing what woke him up. He picked up his pack, expecting it to be heavy as usual, when he surprisingly found it light! He looked in, and in dismay he cried. "It's empty! Where are my caps?"

Well, the monkeys thought this was very funny, and began to snicker. The peddler heard them and glanced up to see a bunch of monkeys wearing his caps! At first he was angry. He shook his fist at them and said, "Give me back my caps!" But the monkeys just chattered and shook their fists back at him. The peddler then stomped his foot, shouting "monkeys!" But the monkeys just stomped their feet and chattered louder. Then the peddler clamped his hands together and pleaded, "Please give me my caps." But the monkeys only clamped their hands back at him.

Suddenly the peddler thought, "Why, they do as I do!" So the peddler jumped up. The monkeys jumped up. The peddler grabbed the cap that was on his own head and threw it to the ground. And luckily, the monkeys did the same.

Quickly, the peddler picked up all the caps and stuffed them into his pack. He said, "Thank you, monkeys," waved goodbye and happily went on his way down the road. The monkeys chattered happily and waved goodbye too, each was pleased with the joke he thought he had played on the other.

The End

In discussing the story, make sure the plot is understood, where the story begins, and how many scenes there might be:

1) The peddler starts out on his travels.
2) He arrives in the village.
3) He stops to rest in the forest.

If the room is large enough, each scene may be set in a different place.

To demonstrate the peddler's occupation, the group might want a breakfast scene with the peddler and his wife. Or, the peddler could have a helper – a son or even a dog – with whom he can communicate as the play begins.

Next, create the people in the village. How many are there? What kind of characters can be created? And the monkeys! The children will have no trouble creating them. And as a last part of the discussion, the children might consider what the monkeys did that the people in the village also did.

After working with simple stories, the group may want to act out longer and more complex stories that require more characterization.

Hints for Directing

* If someone has trouble acting out a character, suggest adjectives to describe the character (for instance, "mad" or "careless"). But don't tell or show how to act. It's important that the children make up the action.

* Try to create images in the children's minds that they can act out.

* Remember that a director of creative dramatics for children must have a lot of patience and understanding.

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DAY CARE for School-agers

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L. Special Interests of the Older Child

1. Overview

Most children age ten and over think that after-school care and summer programs are for "little kids." Programs often *are* geared to the younger child and do not recognize the uniqueness and widening interests of the child ten or older.

Ideas in other sections geared to the younger child can serve to introduce areas an older school-ager may want to pursue in depth. On the other hand, many older school-agers still will need guidance and encouragement to develop skills and knowledge before proceeding to more complicated activities. They also may have little idea of the complexity and scope of the subject in which they are interested.

How might a program meet the needs of older children?

Consider their age. They are ending about ten years of development in which they've been introduced to much. They're beginning the ten years of tough but anxious adolescence. Tastes and interests are widening. Although attention span is choppy, they may have several interests at the same time. They are searchers, gathering information and facts.

Know what concerns them. They want to do something that matters. Doing something just to be busy doesn't make sense to them.

Respect their relationship with other children their age. Friends are important to them. Each needs to feel accepted. Often, similar interests draw them together. There also are times when a child wants to work alone or only with a special friend. Help plan time and space for private activity as well as for small groups.

Recognize individual abilities. Some children are more athletic than others. Some are not so good with their hands. Some have great creative imagination; others enjoy organized activities. Help them feel unique and encourage them to use abilities to the fullest.

Listen to them. There's no better way to get to know them, their needs and interests. Children this age will especially appreciate and respond to adults who care about what they say.

Consider the available time. In the summer, children often spend the whole day at the center.

Projects range from simple to intricate. Most included in this guide are simple. The bibliography for this section lists sources for more involved activities. If one child is interested in creative writing, and another in sewing, they might work together to make puppets and a puppet show.

In after-school care, activities must be of short duration or easy to divide into small sessions.

Help them develop their interests. Show interest and be cooperative. Help them find time, space to work, tools, supplies, and other resources. Help with storage and organization.

Help them find ways to pursue interests outside of day care.

Following are discussions of activities which might interest older school-agers.

2. Paper Art

Paper cutting and folding is fun. A child can transform a piece of paper into a frog or fish. With a few snips of the scissors the school-ager can make a snake that coils.

Projects range simple to intricate. Most included in this guide are simple. The bibliography for this section lists sources for more involved activities.

Some children age ten and older are good with their hands. They understand instructions and visualize end products of folding and cutting. They may want to progress to sophisticated designs. Other children with less ability or interest may be content with a few simple models to show family and friends.

Materials

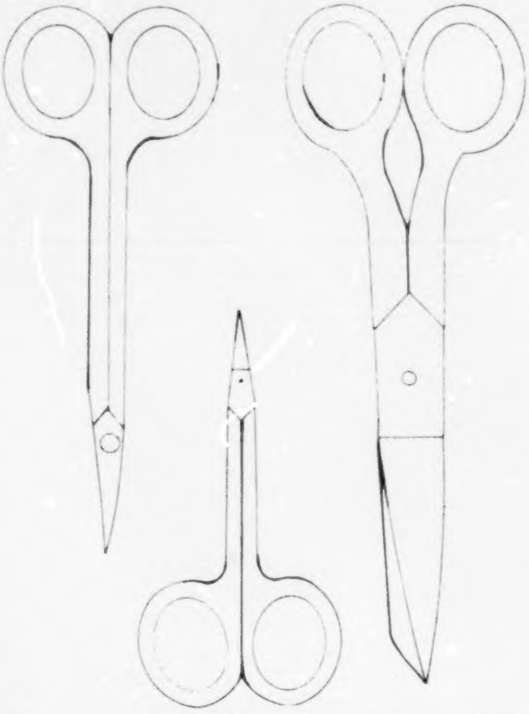
The basic materials for paper art are easy to find and inexpensive, often free.

Save newspapers, magazines, and grocery sacks; ask that neighbors donate them. Often they're colorful. Used greeting cards also can contribute color to a paper supply. Businesses have supplies of obsolete forms they're anxious to discard. Computer printouts may be free from hospitals and industries. Ask people to save wrapping paper from Christmas and birthdays.

Consider type and weight when selecting paper for a project.

Most cutting can be done with average size scissors with pointed tips. Keep scissors sharp and teach the school-agers how to use them safely.

Lini Grol, author of *Scissor Craft*, recommends using a large pair (a) for making an outline, smaller ones (c) to cut a design, and fine scissors (b) for little cuts - to detail a face for example, or for thin lines in a leaf or flower.



For paper projects, there must be enough space to keep tools handy and to work comfortably. Provide a place where spilled glue or scraps of paper will not cause problems.

Delicate designs should be pasted on a base immediately or stored to prevent damage.

Rules

- Take time to be neat. The finished product will reflect the time and care the artist has taken.
- Use a ruler or other straight-edge for making straight lines.
- Make sure folds are precise. Use the thumbnail to emphasize folds.
- Read instructions and use scrap paper to practice each step.

It can be difficult to make even the simplest project on the first try. Tell the school-agers not to expect immediate perfection.

School-agers may become frustrated if they try to make a difficult piece too soon. Encourage them to start with easy projects and gradully work into the intricate designs.

Paper Cutting

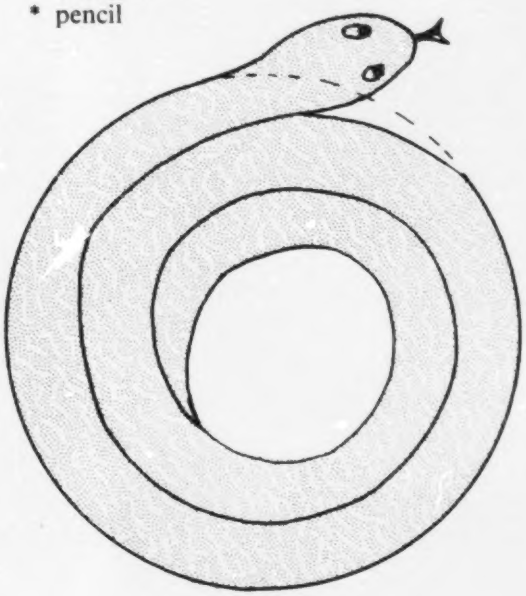
Paper cutting offers lots of artistic possibilities. It can range from the simple paper doily to the intricate paper designs fashioned by Norwegians for centuries.

Experiment. Trial and error may produce delightful results. Even when everyone follows the same instructions, each child can make a unique design.

Coiling Serpent

Materials:

- paper (approximately 4 inches square - try using pages from an old phonebook)
- scissors
- pencil



Directions:

1. Draw a snake head on the left side of the square, halfway between the top and bottom of the paper.
2. Cut out the snake head and continue cutting an inward spiral. The circle in the center may be used for something else.

3. Pin the snake head to a pencil or stick.

4. Hold the stick over a lightbulb, heater, or other source of heat. The design will squirm as if alive.

Mock Stained Glass Windows

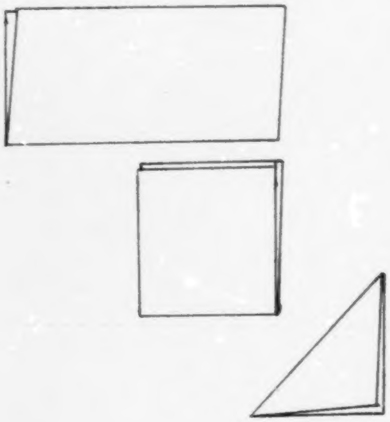
School-agers will enjoy seeing the sunlight shining through the tiny "windows."

Materials:

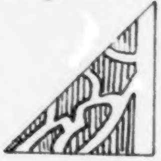
- several (3-4) pieces of colored tissue paper, 8 inches by 8 inches
- 2 pieces of cardboard, 9 inches by 9 inches
- glue
- scissors

Directions:

1. Fold each square of tissue paper in half. Fold it in half again. Fold it diagonally twice. (See illustration.)



2. Cut a different design into each folded piece of tissue paper. Leave a ½-inch margin on side. Sketch the design first.

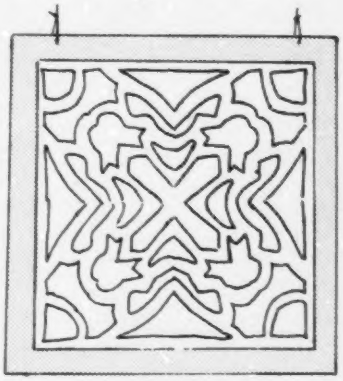


3. Cut 2 square frames from the pieces of cardboard.

4. Glue the tissue squares together at the margins. Too much will ruin the design.

5. Glue the frames onto the tissue squares so the frame does not cover any of the designs.

6. Use a paper clip and string to hang the "stained glass" in front of a window.



Paper Folding

The art of paper folding began in ancient Japan, where it's called "origami." Japanese jugglers astounded audiences for centuries with strange paper creatures. Many people tried and failed to reproduce their "Flapping Bird." The art has been handed down through generations. It spread into Spain and other countries where new designs were invented. Houdini, the famous magician and escape artist, wrote a book on "paper magic" and used it during performances.

Today origami is popular in China, France, Germany, England, and the United States. Origami enthusiasts are all over the world.

According to Robert Harbin in *Paper Magic*, experts insist on these rules:

"1. The paper model must be achieved by folding *only*, without the aid of scissors or glue.

"2. The shape of the model should be easily recognizable without the aid of colors or special markings.

"3. The model should be capable of folding flat after it has been displayed."

School-agers may want to use colored paper sometimes and make designs with scissors.

Like paper cutting, origami ranges from very simple to complicated designs, and there is a world of designs yet to be discovered. The basic folds are like the notes of the music scale in that they can be arranged and modified to make hundreds of unique designs.

Paper folding can be an absorbing hobby. Tiny models are challenging and make a lovely display. Experimenting with color also can be interesting.

The paper glider and paper hat are two simple designs for beginners. The paper airplane has been modified thousands of times to make a perfect model.

The following activity is slightly more difficult than a glider or hat but simple enough for a first project.

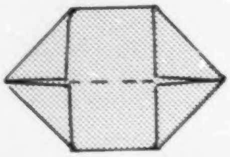
Talking Fish

Materials:

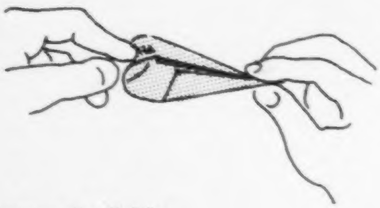
- a piece of paper about the size and thickness of an index card

Directions:

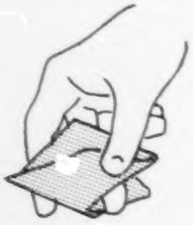
1. Fold the card in half to form a crease down the middle.
2. Unfold the card. Fold each of the four corners to the middle so they meet at the crease line.



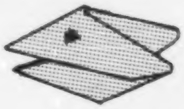
3. Bring the pointed ends together, pushing one inside the other.
4. Holding the card at the point with one hand, use the index finger of the other hand to push the end opposite to the point as far up as possible.



5. Flatten the folds.
6. Turn the loose flaps inward.



7. Hold the fish in both hands. Use the thumb and index finger of each hand to hold the overlapping edges of the fish. By working these flaps in and out, the fish's mouth can be made to open and close.



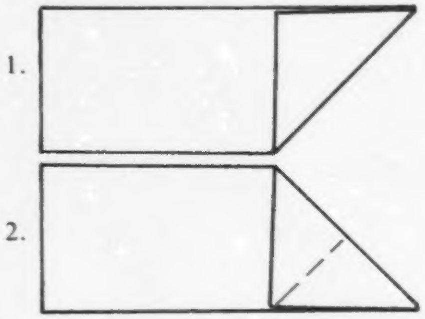
Leaping Frog

Material:

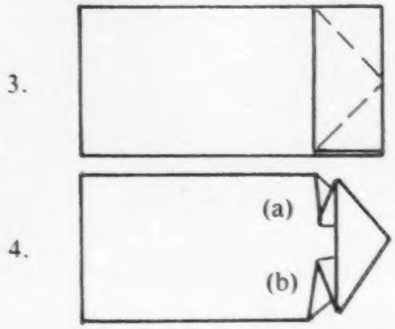
- a piece of medium-weight paper, 2½ inches by 6 inches

Directions:

1. Fold top right corner to form a triangle. Crease and unfold.

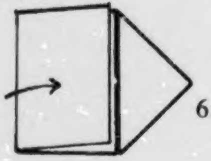


2. Fold top left corner to form a triangle. Crease and unfold.
3. Fold the top down to make a line across the middle of the "X" formed by the two previous folds.



4. Depress the "X." Bring point (a) to meet point (b). Recrease all folds.

5. Fold bottom edge up to meet the base of the triangle.

5.


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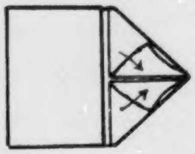

6. Fold outside points of triangle up to meet point.

7. Fold the sides of the paper in to meet at the center.

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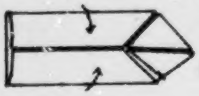

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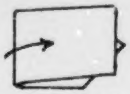

8. Fold the paper in half, bringing the lower edge up to the tip.

9. Fold the bottom half in half again.

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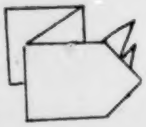

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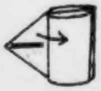


10. Gently pull down the loose ends of the triangle. These are the legs of the frog. Stroke his back with an index finger — the frog will jump.

3. Puzzles

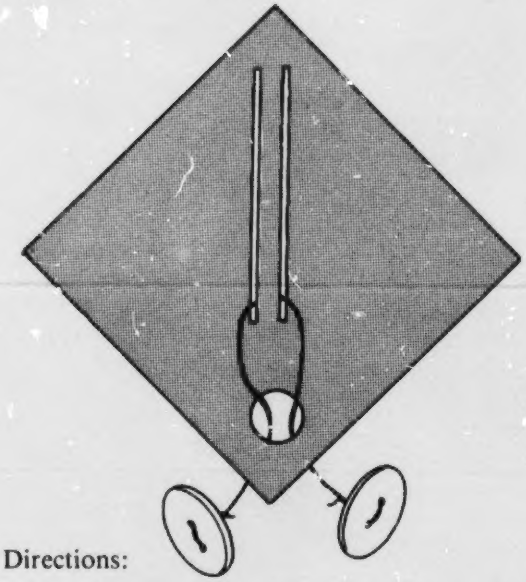
Puzzles may be easy or challenging. Some are like magic because they fool an audience. Puzzles may or may not require props.

School-agers might collect and share puzzles. The following are made from common, inexpensive materials.

Button Puzzle

Materials:

- a piece of string 10 inches long
- 2 large buttons
- 6-inch piece of sturdy paper
- scissors



Directions:

1. Cut a small hole in one end of the paper, too small for the buttons to pass through. Cut 2 slits down the middle directly above the hole, making a strip narrower than the hole.
2. Insert the string through the hole, under the slit, and back through the hole.
3. Tie a button to the end of each string.
4. The object is to remove the string and buttons without forcing the buttons through the holes.

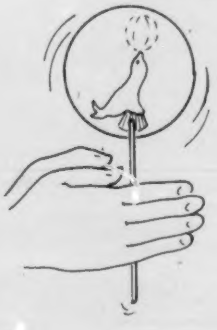
(The secret is to bend the slit and push it through the hole. Then the button can be passed by the strip and the string freed.)

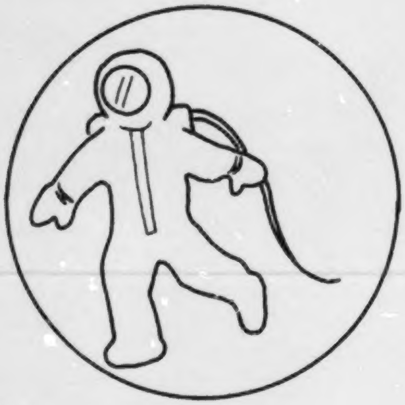
Eye Teaser

Optical illusions interest everyone, and are a favorite of school-agers.

Materials:

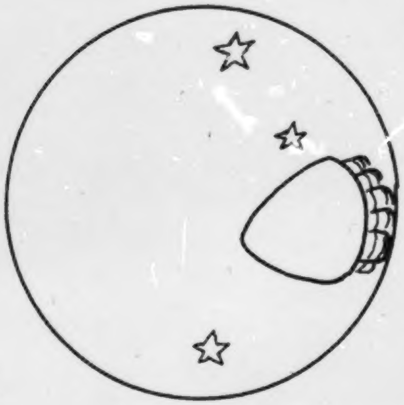
- straight stick, about 6 inches long
- cardboard circle
- pencil and marker or crayons





Directions:

1. On one side of the circle, in pencil draw an astronaut on a space walk. Be sure a life support system cable is extended.



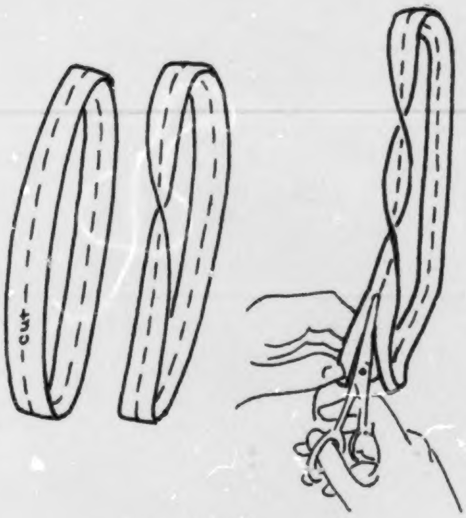
2. On the other side draw a space capsule.
3. With a knife, cut a half-inch deep slit at one end of the stick. Insert the cardboard circle with the drawing upright. Quickly twirl the stick back and forth between palms. If the astronaut and capsule don't seem connected, adjust the drawing. It should appear that the astronaut is walking in space. Go over pencil lines with a marker or crayon.

Other combinations of pictures are a fish and a worm on a hook, a bird and a branch, a seal and a ball.

Ring Puzzle

Things are not always what they seem. For example, what results when a ring of paper is cut through the center, as shown? Try it and see.

Materials:
- double sheet of newspaper
- scissors
- glue or adhesive tape



Directions:

1. Cut 3 strips of paper, 1 inch in width, from the longest edge of a double sheet of newspaper.
2. Bring the ends of one strip together and glue or tape. Be sure there are no kinks in the ring.
3. Make a second ring. Twist one of the ends over once before fastening the ends together.
4. Make a third ring. Twist the strip twice before fastening the ends together.
5. Cut each ring between the edges as shown.

By following directions exactly, the following should have resulted:

- 2 separate rings from the ring without a twist
- 1 large ring from the ring with 1 twist
- from the ring with two twists, 2 rings joined together

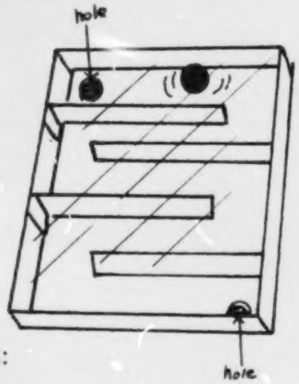
Children who know about the Ring Puzzle can challenge others to guess the results.

Maze Puzzle

This puzzle is simple and inexpensive. A group of children could take turns playing it – seeing who finishes in the least amount of time.

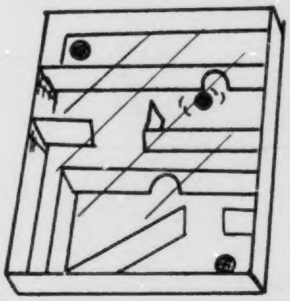
Materials:

- rectangular box approximately 4 inches by 3 inches and 1 inch deep (example: a paper clip box)
- small piece of paper
- small piece of cardboard (enough to line the bottom of the box)
- tape
- transparent wrap
- small ball (bail bearing, bead)
- hole puncher

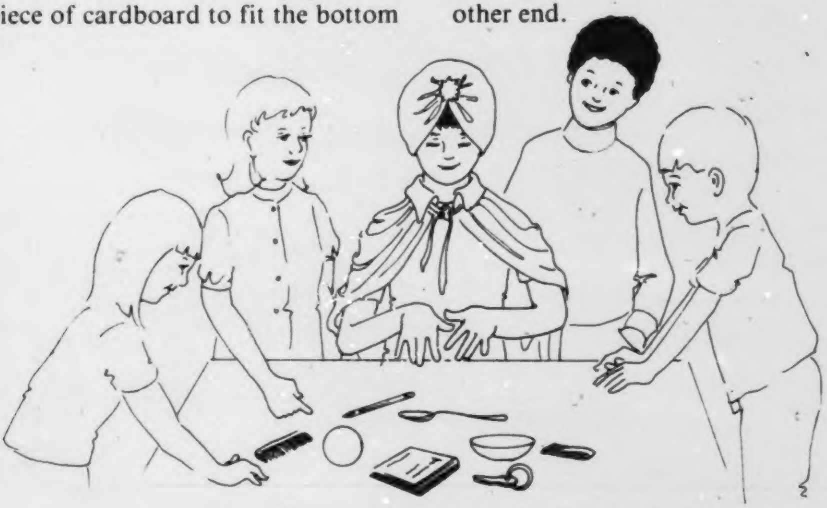


Directions:

1. Line the bottom of the box with paper.
2. Cut a piece of cardboard to fit the bottom of the box.
3. Punch two holes in the cardboard, one at each end as shown.
4. Cut strips of cardboard ½ inch wide and 3 inches long.
5. Form a maze in the box with the strips. Bend one end of each strip.
6. Tape the folded ends of each strip to side of box. Alternate sides to create maze. Tape loose ends of strips to bottom of box.



7. Drop ball (bead, ball bearing) into box.
8. Cover box with transparent wrap.
9. The object is to move the ball from the hole at one end of the box to the hole at the other end.



4. Magic

Children enjoy magicians and magic tricks and want to find out how tricks are done.

For some, reading about popular magic tricks or famous magicians is enough. Some may want to do the tricks. A few may want to become magicians, develop magic acts.

The following magic tricks are easy and effective. Several require the assistance of others.

Mind Reader

What Others See

The magician claims to be able to read minds. The magician leaves the room and the audience selects an object. The magician returns and guesses the object chosen.

How It Works

In the audience is a secret assistant. The assistant and magician have a signal. For instance, when the magician returns, the assistant points to a blue object before pointing to the correct one. The second time, the assistant points to a red object before pointing to the correct one.

Sack Escape

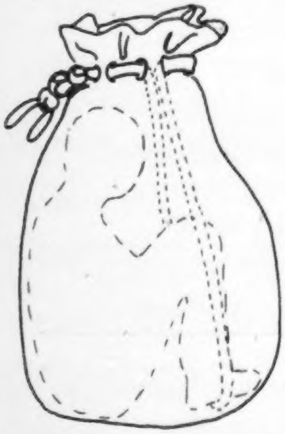
What Others See

The assistant steps into a sack, which then is tied shut. A member of the audience ties a few more knots. The magician holds a sheet or screen in front of the sack and within seconds the assistant walks from behind the screen with the sack still tied.

How It Works

The magician uses a laundry bag or other cloth bag (not plastic) which ties at the top, and a long rope approximately six feet long to tie the sack. Before the performance, the sack is tied shut with the extra length of rope inside.

When climbing into the sack, the assistant steps on the loop of rope and stands on it while the sack is tied.



When the screen is in place, the assistant pushes the extra length of rope out to loosen the top, steps out of the sack, pushes the extra rope back inside the bag, then steps out from behind the screen while holding the tied sack.

The magician makes a few jokes or remarks to entertain the audience while the assistant is behind the screen.

Ball in a Sack

This isn't a trick but it's fun.

What Others See

Put 2 open paper sacks on the floor. Drop a rubber ball into one, make it appear in the other sack, then return to the first sack.

How It Works

Place the paper sacks on the floor several feet apart. Drop the ball into one of them. Brag about being able to make the ball disappear and reappear in the second sack. Say a magic word. Walk over to the second sack. Look relieved and excited. Announce, "It worked!" Predict making the ball appear again in the first sack. Say the magic word again. Walk to the first sack, pick it up, and dump the ball out. The audience won't be fooled, but they will be amused.

Magic Handkerchief

What Others See

The magician shows there is nothing in his or her hand or sleeves, then rubs hands together magically and shakes out a handkerchief.

How It Works

Before the trick, the magician folds a colored handkerchief under the left arm. Then the magician shows the right hand, and pushes the right sleeve up a little with the left hand, with thumb on top of the arm and hand under the upper arm. The magician then shows the left hand and sleeve the same way, with right hand under left arm, sneaks the handkerchief into the right hand, rubs hands together, and shakes out the handkerchief.

The Art of Magic

Being a good magician takes time and patience. Each trick must be practiced over and over.

Encourage children to be selective in deciding which tricks to do, choosing those they can do well.

Consider the performance as a whole. Include a variety of tricks that work well together. Performing tricks which require few props is easier and more exciting. Do several short tricks rather than a few long ones — the audience will become distracted if the tricks take too long.

Steps for learning a new trick:

- read directions all the way through
- collect props
- practice

Practicing in front of a mirror provides a kind of audience. Family and friends may be willing and helpful audiences, too. Watching magicians on television is helpful. How do they hold the audiences attention? What about their style? The success of a performance does not depend entirely upon the tricks, there should be a constant flow of small talk and an ease of manner that gives polish to the performance.

5. Dyeing With Plants

The children might enjoy dyeing fabric for its own sake or as related to something else. For example, they could gather berries while on a nature walk, then see what happens to a piece of cloth when dipped in berry juice.

Natural dyes are used to color cotton, wool, flax, and silk. For thousands of years, people have dyed cloth and yarns with plants and insects. Natural dyes make warm and beautiful colors, different from most commercial dyes.

Plants used as natural dyes include onions and onion skins; beets; purple cabbage; grapes; cranberries; orange, lemon and tangerine skins; acorns; ferns; nutshells; berries; flower blossoms; and roots. Almost any plant can provide a color of dye.

Dyeing involves four processes: washing, mordanting, dyeing, and rinsing.

Preparations

Choose a fabric, maybe a small piece of neutral-colored wool. Wash it and squeeze out the water.

Mordanting

A mordant is a substance that opens the pores of a material so it can absorb dye. Most plants require mordants to hold color permanently.

Wool absorbs mordants well, but cotton, linen, and silk require longer, more complicated processes. Mordanting can be done before, during, or after dyeing, depending on the mordant used.

Eack kind has a unique coloring effect on cloth or yarn. Common mordants include vinegar, ammonia, alum, iron, and salt. In the following examples, alum is used.

Note: Alum is poisonous, so be careful when using it.

Three kinds of plant dye are described below. Follow directions carefully.

Blue Dye: With Blueberries

Preaparations

Wash and rinse the wool.

Mordanting:

Dissolve a cup of alum and ¼-cup cream of tartar into 2 gallons of water. Bring to a boil, then add the wet wool. Boil gently for an hour. Hang to dry completely before dyeing.

Dyeing:

Crush the blueberries, cover with water, and soak for an hour. Boil for 30 minutes. Strain and discard the berries. Add cold water to the liquid to make 2 gallons. Add 2 tablespoons copper sulfate and bring to a boil. Dampen the wool in cool water. Add the wool to the mixture and boil gently for an hour. Wash in soapy water and then rinse until the water is clear. Dry.

Green Dye: With Onions

Preparations

Wash and rinse the wool.

Mordanting

Dissolve ½-cup alum and ¼-cup cream of tartar into 2 gallons of water. Bring to a boil. Dampen the wool with cool water. Add the wool to the liquid mixture and boil gently for 30 minutes. Hang to dry completely before dyeing.

Dyeing:

Slice 5 whole onions, cover with water, and soak overnight. Boil onions for an hour. Strain onions out of the liquid. Add cold water to make 2 gallons, bring to a boil. Dampen the mordanted wool. Add the wool to the boiling dye bath and boil gently for an hour. Rinse until the water is clear and dry in a shaded area.

Brown Dye: With Tea Leaves

Preparations For Dyeing:

Wash and rinse the wool.

Mordanting: None required.

Dyeing:

Cover 2 cups tea leaves with water and soak overnight. Boil the next day for 15 minutes. Strain the tea leaves and discard. Add water to the liquid to make 2 gallons. Bring to a boil and add the damp wool. Boil gently for 30 minutes. Rinse until the water is clear and hang to dry in a shaded area.

Miscellaneous Information

* A pot can change the color of a dye by acting as a mordant. Enamel pots give the clearest colors.

* Use an equal weight of plant material and fiber or fabric. More plant material will make a stronger dye; less will make a weaker dye.

* Plants can be freshly picked and used, or dried away from sunlight, stored, and used later.

What Plants for What Colors

Red: red and pink carnations, beets, red geraniums, red gladiolis, red poppies, tulips, pokeberries

Orange: onion skins, dahlia flowers

Blue: blueberries, grapes, purple cabbage, iris flowers

Tan: coffee beans, grounds, lichens, oak leaves (after frost)

Grey: lichens, onion skins in a rusty can

Purple: red cabbage

Yellow: buttercups, daffodil flowers, onion skins and onions, marigold flowers, pansies, dahlias, sunflowers, tangerine and orange skins, cottonwood leaves (asper)

Green: iris flowers, pansies, grass, nettles, red cabbage with alum

Beige: ferns, spruce cones, larch cones, tomato leaves

Brown: acrons, pear leaves, black walnut hulls, dahlia flowers, tea

Black: blackberry roots, scarlet maple bark (with an iron pot or rusty can), sumac (with iron)

Many other plants will make dyes — experiment with them.

Tie Dyeing

Materials:

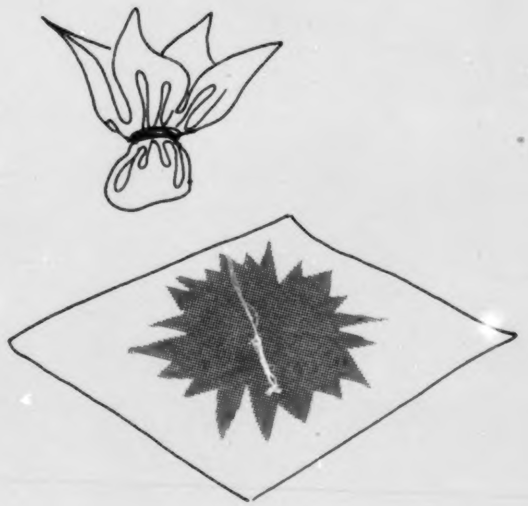
* wool or other material to dye, perhaps for a wall hanging

* natural dyes

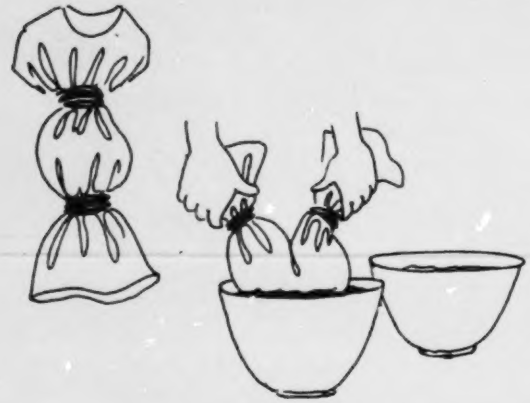
* rubber bands

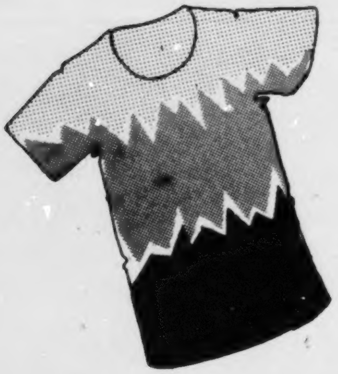
Directions:

Tie bunches of fabric with rubber bands. Dip them into different shades of dye. Allow dyed pieces to dry before removing rubber bands.



Note: Younger school-agers might want to tie





dye a tee shirt, skirt, or other personal item. If so, use purchased dye.

6. Growing Things

Encourage the school-ager interested in growing things to consider the following:

- Do what an experienced gardener would do but on a small scale. See the gardening part of the science and nature section in this guide. Consider using the tire planter described in this section as a container.
- Concentrate on one plant. Watch it go through a whole life cycle. Observe each stage and keep records if the children want.
- Become an apprentice to a neighborhood gardener. In return for an hour's help each day, the gardener might share information and vegetables.
- Become the manager of a garden at the day care center, doing some of the work and being responsible for planning and special chores.
- Develop a bottle garden. See ideas in this section.

Gathering Information

If there's no opportunity for growing plants, the older school-ager might gather information for areas of study such as:

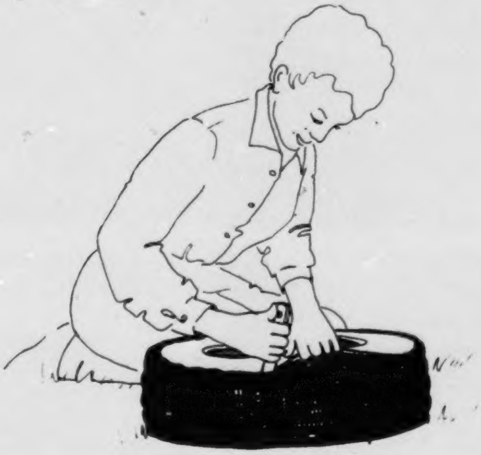
- diagnosing plant ailments;
- companion planting;
- growing new plants from old;
- composting and improving the soil;
- watering systems;
- hanging baskets;
- climbing and supporting devices for vegetables.

Making A Tire Planter

An easy and cheap planter can be made from a used automobile tire. A slick tire with worn tread is easiest to work with; a steel belted radial is the most difficult.

Materials:

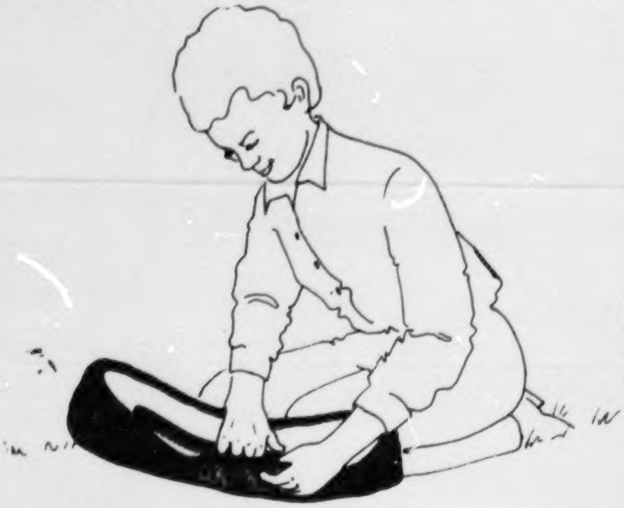
- automobile tire
- sharp, straight-edged knife (not pocket knife which can close on the fingers)
- paint



Directions:

1. Place the tire flat on the ground. Insert the knife as close as possible to the outside tread (but not in the outside tread and not in the tire's bead, which is the part of the tire that hooks over the rim).
2. Once a slit is cut in the sidewall large enough for a hand, grasp the sidewall and pull while cutting. This makes cutting easier. Pull and cut until the sidewall and bead are removed.

3. Turn the tire over so the cut side is down. Pull up on the cut edge while pushing down on the bead on the un-cut side.



4. Pull, push, and wrestle until the tire is inside out.

5. Paint the tire, now a round planter, with exterior paint.

6. Place the planter where it's to be used.

7. Cover the hole in the bottom with a plastic garbage bag to prevent weeds and grass from growing up through it.

8. Fill with soil.

Note: The cut-out rings of rubber make good bases for games.

Developing A Bottle Garden

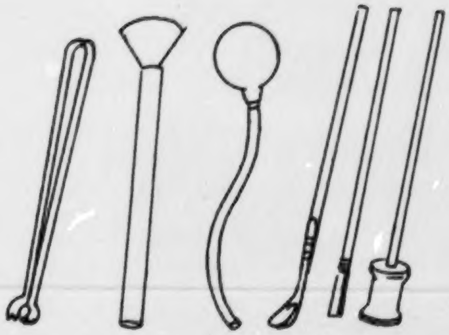
Tiny gardens are attractive and fun to tend. They require special preparation but are easy to maintain. The plants grow larger than the bottle opening.

Materials:

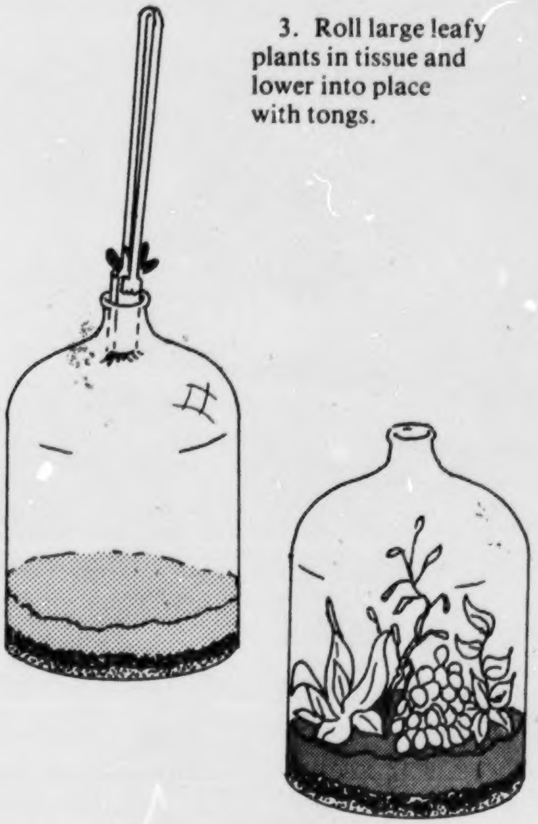
- a large clean bottle
- long slender tongs
- funnel and cardboard tube
- bulb syringe and rubber tube
- spoon, razor blade, thread
- spools, fastened to a long, slender stick
- small plants that grow slowly

Directions:

1. Use window cleaner, a paper towel, and tongs to clean the inside of the bottle.



2. Put in a layer of sand ¾ inch to 1½ inch deep, then a 1-inch layer of crushed charcoal (for sweet smell), then 2 or 3 inches of potting soil. Use the funnel and tube to put layers in place.



3. Roll large leafy plants in tissue and lower into place with tongs.

4. Use spoon on stick to dig holes and position plants.

5. Tamp soil around plants with spoon or stick.

6. Prune with razor blades. Use tongs to pick up cuttings.

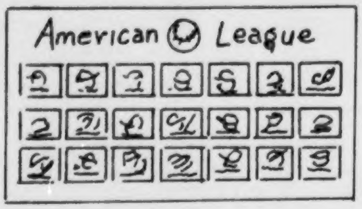
7. Water with bulb syringe with tube.

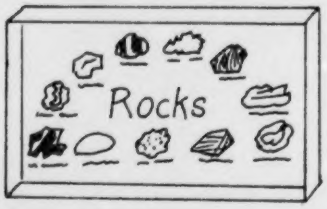
8. Wash inside of jar as needed.

7. Collections

Collections are important to school-agers. They can be an absorbing past time and may develop into a lifetime pleasure and maybe an unusual profession. Collections often start with an interest in one item, which forms the nucleus of a collection. For example:

- An interest in baseball may lead to collecting baseball cards or keeping batting averages.





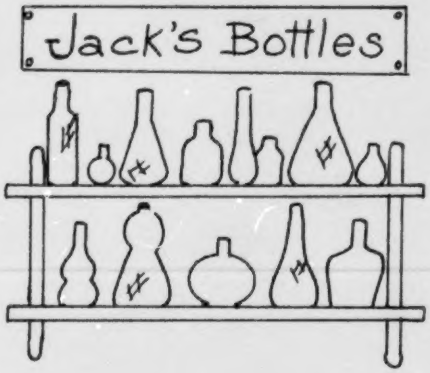
- Rocks may stimulate interest in classifying.
- A doll from a foreign country may stimulate interest in others from other countries.
- Pennies from various years and mints can become an interesting and profitable hobby.
- Bottles of unusual shapes or colors are easy to find.

Many things commonplace today will be rare and valuable later.

Getting Started

Encourage the older school-agers. For instance, when a child shows a "special" rock, show interest in it. Wonder aloud what makes it sparkle, why does it have so many tiny holes, isn't it a pretty color? Does it look like some animal?

Take advantage of resources that could stimulate interest in collecting. For instance, if the center is close to a beach, a morning walk might turn up a variety of shells.



Maintaining Interest

Search for volunteers to display collections. For instance, a lady who restores dolls might enjoy having several interested children see her collection. Locate other adults with collections of magazines, paperback books, or catalogues. Advertise exhibits, shows, and conferences on subjects that interest school-agers.

Help the children find needed tools and supplies. Some tools may require a search. Collectors also need a place to store items when not working on them.

Help with organization. Use flat boxes for rocks and shells. Label each, then cover boxes with plastic wrap for protection. A five-gallon ice cream carton makes a nice base for a collage of pictures and can serve as a storage container. A discarded wallpaper book can make a scrapbook.

Helping Each Other

Help the children gain interest and respect for other's collections. As they watch collections grow and see the involvement of the collector, they become more aware of the time and effort required. They also notice how much the collector is learning. They may try to help each other with collections.

8. Mirror Images

Around age ten, children begin to care how they look. They don't want to look different than their friends. They experiment with hair styles and clothes, and imitate television and movie stars or older brothers and sisters. The school-ager who seems not to have interest in appearance may be mimicing the casual style of others.

The adult's attitude is important. Some children may need reassurance that being well-groomed is pleasing to the group. Others need to feel it's okay that clothes and grooming are not yet important to them.

Books, current magazines on grooming, clothes, and accessories may be especially appreciated by some of the children.

Hair Care

Activities related to hair care which children may wish to try include:

- Learning about types of hair - straight, naturally curly, thick, thin, fine, and coarse, and deciding who has what type hair;
- Trying different ways to part hair and deciding how each affects appearance;
- Deciding what tools are necessary for hair grooming, and learning to care for and clean tools.

Complexion

Children age ten and over usually have acne. They need to know that it is normal, that it happens because the body is growing and changing.

Some are embarrassed to talk about complexion problems. Books, pamphlets, or magazines may be helpful. Be available to children who do want to talk about such problems.

Clothes

Children this age want to dress like their friends. At the same time, they can be individualistic by choosing styles and colors which reflect personal taste.

Related activities include:

- Discovering which colors are best for the child's skin tone by holding colors against the cheek while looking in a mirror;

Experimenting with fabrics of various colors and patterns by holding them up in front of the body while looking in the mirror. Large patterns, vertical stripes, splashy prints, and dark colors influence appearance.

Props

The following props may stimulate interest in grooming:

- mirrors and good lighting;
- camera and film, maybe for a "before and after" exercise;
- weight scale and height measure;
- grooming tools;
- chart of ideal weights according to age, size of frame, and height;
- information about diet;
- scraps of carpet for exercise pads.

Some areas may only require library books — posture, manners, nail care, dental care, skin care.

9. Repair Work

School-agers like to solve problems but tire easily of projects that are insignificant. They prefer to confront real problems.

For those who like to work with their hands, a repair project can be fun. Fixing a leaky faucet, broken bicycle wheel, or sagging screen door may be an interesting project. And fixing things is great for self-esteem.

There may be broken items at the center or school-agers may want to repair things brought from home.

Getting Started

It's difficult for most children to begin a repairing project. An adult can help plan at least the first project. Eventually, children will discover that, with the appropriate tools, almost anything can be repaired.

The following are important for doing simple household repairs:

- Encourage the child to study the problem.
- Talk about it together.
- Consult with the director if it involves repair to the facility.
- Research for more information, if needed.
- Special tools are necessary for some repairs. A relative or volunteer may have the skills, tools, and a willingness to teach the children.
- Find ways to get tools and materials. (Some may be at the center.)
- Be ready to assist.
- Praise the child's effort whether successful or not.
- Closely supervise electrical and plumbing repairs.
- Call the county agricultural extension agent for free brochures on home repairs and other minor repairs.

When children fix things together, they exchange ideas, share responsibilities, and develop abilities. They become more responsible. They learn self-sufficiency and that repairing things can be fun.

Activities

A group of children may want to repair toys at Christmas to donate to needy families. They can collect used, broken toys from home and neighborhood. Other toys may be donated to the center. Once toys are repaired, the children can contact a community group that distributes to needy families.

Older school-agers may want to:

- fix a sagging screen door;
- replace a broken plug;
- unstick a door;
- clean and lubricate wheel toys;
- put wheels on cabinets;
- repair a leaky faucet;
- wash a car;
- repair a bicycle tire;
- fix a dripping toilet tank;
- study the building, decide how fuel is wasted, and do something to save fuel (such as weather-stripping doors).

10. Problems of Society — Conservation

Children's interests broaden — from self, home, and neighborhood, to city, state, country, and world.

If the child is interested in a problem, the adult should be encouraging and help the child investigate it. Or see that someone else helps.

Older school-agers are ready to do something that matters. They are attracted to causes. They are impatient.

Conservation is a cause in which they may be interested.

Conservation has to do with the care and preservation of natural resources. Air, water, snakes and butterflies, mud and mountains, trees and flowers, everything in the environment — all are natural resources.

These resources are being abused and wasted. Clean air and water are poisoned by waste and litter. Animals and plants die as a result of human carelessness. Forests and cities are becoming overcrowded and noisy.

To save the environment, everyone must become involved, stop being wasteful, become aware of natural resources and their value.

Conservation is a problem children can understand. And they can have an immediate affect on the problem — directly through their actions, and indirectly by influencing parents and community. Perhaps they will become better guardians of the environment than the generations before them.

Air Pollution

Air pollution contributes to respiratory diseases, such as lung cancer, emphysema, bronchitis, and asthma. People tend to blame air pollution on industry. But private citizens add to the problem. For instance, the exhausts of automobiles contain carbon dioxide and other harmful gases.

Water Pollution

Chemicals and other industrial wastes are making lakes, streams, and oceans less able to support fish, plants, and other wildlife. Many waterways are becoming poisonous.

Pesticides sprayed onto farms, ranches, and gardens, drain into lakes and streams and are absorbed by plants and tiny water-animals. These animals are eaten by fish and fish-eating mammals, some of which are eaten by humans.

Endangered Species

Early settlers found wild land heavily populated with wildlife. They began to kill animals for food and to protect crops.

In some cases, humans have destroyed entire breeds of animals. The buffalo, prairie dog, and alligator are examples.

Noise Pollution

The population explosion and technology have caused noise pollution. At one time, almost all sounds were natural. The sounds of birds, humans, and other animals were absorbed into the trees and mountains. Then came civilization.

Mountains were leveled to make way for super highways, diesel trucks, and automobiles. Trees and bushes were cut down to make way for concrete and glass buildings. Now the natural sounds and the sounds of machines bounce off the hard surfaces of civilization.

Package Pollution

Cardboard or plastic surrounds every commercial product. Are they needed? Our ancestors bought almost everything unpackaged.

Unlike natural items, packages are not easily decomposed by bacteria. As discussed in the nature section of this guide, composts consisting of trash and refuse can be recycled into the soil and provide nutrients for plants. Fresh fruits and vegetables come in natural packages. Skins, rinds, and shells are biodegradable packages. But plastic packages are of no use to the soil. Some give off poisonous gases when burned.

Conservation Projects

Chances are that the children already are conscientious about the environment. Show them that they are making a difference.

For the older school-ager, the following activities are challenging:

- Collecting paper and bottles for recycling;
- Using recyclables in arts and crafts;
- Collecting rainwater for plants;
- Making compost;
- Refusing unnecessary paper sacks;
- Turning out lights when not being used;
- Planting and caring for a tree;
- Making a survey of community conservation problems;
- Changing traffic patterns which have worn out grass;
- Collecting articles and pictures of conservation problems from magazines and newspapers;
- Going to the zoo to see if the animals are well cared for — if not, writing the mayor or a congressman;
- Cleaning up litter near a favorite lake or stream;
- Inviting a representative from Texas Parks and Wildlife, Air Quality Control Board, or another agency concerned with conservation, to speak to the group.

Adult Leadership

Adults should consider the example they are setting. Are they wasteful? If environmentally conscious, they should show that concern to the children. They should explain why it is important to save paper scraps for arts and crafts.

Adults can help school-agers become involved in conservation problems and other problems of society by being informed about what is going on in the community and the country, by having answers when a curious child needs information about the environment and its protection.

11. Group Projects

There are several reasons that older children like group projects:

* Friends are important to them. Working together on a project creates comradeship.

* Each is developing a sense of organization. Each is beginning to enjoy planning and following through.

* They want to feel that what they do matters. As they work with the group, they will feel their contributions are important.

* Group projects can allow for special interests and skills. Carefully determine group members and the subject to be dealt with.

Hints

* Group projects may take a long time — maybe most of a summer.

* Not every child will want to participate. Each should be encouraged but the choice should be the child's. Alternative activities should be available.

* Interests change fast at this age. Adjust accordingly.

Examples

* A stage play, complete with script, costumes, props, and a small stage, might be fun for a group which includes a child interested in creative writing, several interested in sewing, a child interested in carpentry, and a child who enjoys making props. There must be a lot of time, space, and encouragement.

* If a group includes children who enjoy writing, children interested in machines, children who enjoy meeting new people, and a child who can plan details, and if there's space, time, interest, and enthusiasm, the children could put out a center (or neighborhood) news bulletin complete with reporting, a hand printing press, subscription seekers, and editor.

* If a group has a child who can play the guitar and another interested in poetry, the results could be a song with original music and lyrics.

* If there are children who can weave and others interested in the outdoors, they could make natural-dyed weavings of yarns, and other things colored by dyes made of natural materials.

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DAY CARE for School-agers

PS 010257

M. Routines and Management

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2. Before-School Care and After-School Care M-3

3. Summer Day Care Programs . M-3
    Three-Month Summer Program M-3
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Routines and Management

1. Overview

Each day care center is unique and needs a unique program. The program should be flexible: characteristics of school-agers vary from group to group and may change during the year.

Planning also must consider the school hours, program length, the type and amount of the center's equipment and other facilities, and whether facilities are shared with another organization. Planning should deal with the arrangement of equipment and use of space in order to foster children's independence. The sections in this guide on planning the environment and on activities give a broad range of considerations regarding planning.

Flexibility is essential but school-agers must know what to expect. There must be guidelines.

Children and staff need to agree on:

- where materials or equipment may be used;
- the number of children who can participate in an activity at the same time;
- how turns are decided (perhaps a waiting list);
- how long an activity may continue when someone is waiting for a turn;
- ways to care for the environment and materials, and clean-up procedures.

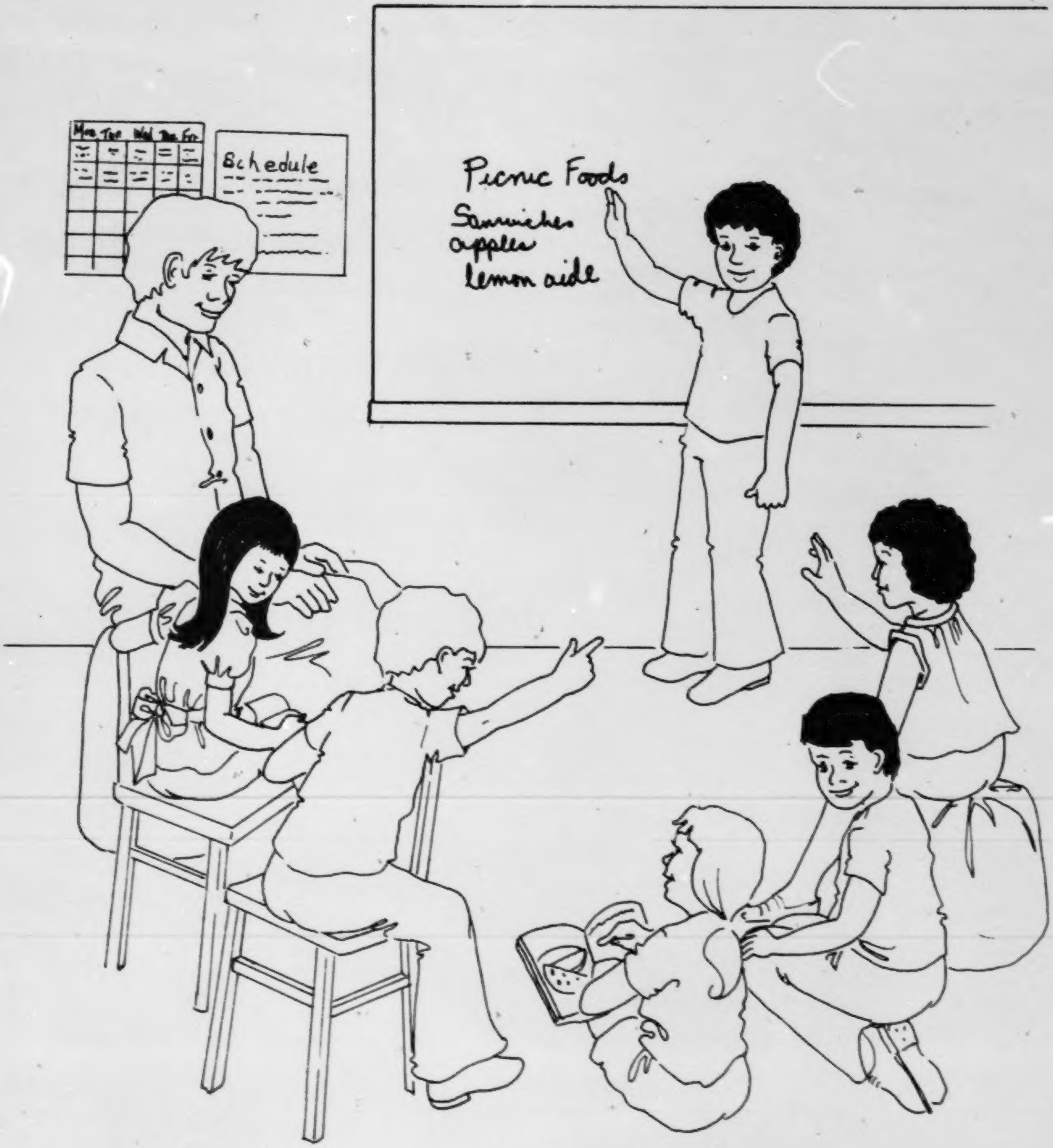
Think through what is needed and why. Develop a plan and rules. For example, materials should be stored so that children can help themselves. A sense of responsibility and respect for possessions is learned through care of materials. Many games have small parts and pieces that must be returned to the box after play so they are not lost or damaged. A check-out system for equipment works well.

Ten Rules for Classroom Management

1. Describe precisely the desired behavior.
2. Ignore slight misbehaviors. The child may want the attention – when there is no reward for misbehaviors, they're discontinued.
3. Be cool. When dealing with misbehaviors, it's okay to show anger but remain calm and speak quietly.
4. Avoid arguments. Give an instruction and be sure it's heard and understood. Discuss its purpose. Once everyone agrees it's a good idea, the children should not argue when it's put into effect.
5. When giving children an unpleasant task, let them know that something pleasant will follow.
6. Reward desired behavior immediately. Reward behavior that's almost what's wanted rather than criticizing it for not being perfect. (Rewards don't have to be material things such as candy, toys, or money. The children want to please; showing approval can be a highly motivating reward.)
7. Reward a child's efforts to improve behavior. After punishing for a broken rule, make a point of showing approval of acceptable behavior.
8. Don't force a child to confess to a misdeed. Instead, explain why it was wrong and that it should not be repeated. Explain the pleasant consequences of observing the rule and the unpleasant consequences of breaking it.
9. Keep scoldings confidential. Reprimand the child quietly and out of earshot of others.
10. Train children to be responsible for their behavior by offering them choices.

Adapted from "Discipline Is Not Something You Do to Somebody" by Thomas G. Banville, *Early Years*, February, 1975.

Group Planning


Mon Tue Wed Thu Fri
Schedule
Picnic Foods
Sanwiches
apples
lemon aide

2. Before-School Care and After-School Care

The time the school-ager spends in school is likely to be regimented. So it's important that the hours outside of school be less structured and pressure-free. Children need free-time. However, in any group situation there must be enough structure so that individual rights are protected.

Usually snacks are planned for soon after arrival - most children have had lunch early and some have walked from school and are hungry and thirsty. But others may have eaten recently, so snacks should remain available and children have the freedom to eat when hungry. If each child is responsible for snacking and cleanup, others will not have to interrupt what they are doing. For this system to work, everyone must understand and abide by the rules.

An hour or so of free play should be allowed immediately following school. School-agers might choose to play outside, select a quiet game, play with a friend, work on homework, listen to records, do art work.

Certain days of the week could be used for a special type of activity following free play. On Mondays at 3:30, art might be scheduled. On another day at 3:30, there might be special music activities. Or plan field trips on a regular basis. Planning should involve staff, children, and parents. Plans should be posted. Don't be afraid to alter them if something special comes along - plans should not prevent spontaneity. Of course, parents always must know where to find their children.

3. Summer Day Care Programs

A summer program should differ in many ways from after-school programs. Children need a change from the regimentation and organization that is so much a part of most school years. A summer program can focus on summer activities that involve good weather and large blocks of time. Plan for the children to be outside for many regular activities. Include gardening, nature exploration, sports and games, and swimming, if possible. Summer day care can include water, sand, mud and plenty of encouragement for getting dirty. Bathing suits, cut-offs, and old clothes may be standard dress.

Develop routines that best fit the needs of the children and staff. Include activities that can be accomplished at the facility with available resources. But don't settle for a conventional program simply because some resources aren't handy. Reach out to the community for resources.

Each program will have a different schedule. One might be organized like a summer camp, with a large staff and lots of volunteer help from local colleges and churches. Another might provide a variety of structured activities. The lower the ratio of staff to children, and the less experience of the staff, the more structure may be necessary.

Three-Month Summer Program

The day might be scheduled along the following guidelines:

7:00-8:00 — Children arrive ready to eat breakfast. This is a good time for simple cooking experiences and an opportunity for education about nutrition. Try out recipes for pancakes that the children can cook. Boil eggs to see how long it takes to get the egg the way the child wants it. Let children make their own Granola from grains, fruits, and nuts. Serve a variety of cereals, comparing nutritional value and cost. Breakfast takes a little longer when the children are involved and may cost more, but it's a good learning activity and most of the children will be interested and not mind the wait.

8:30 — Clean-up. Involving children in housekeeping activities teaches them useful skills and a sense of accomplishment and involvement. Children may take their own dishes to the kitchen and load them in the dishwasher, or committees could be formed.

9:00-10:30 — Outdoor activities. Active outdoor activities are good early in the day before it gets too hot. Hopscotch, jump rope, kickball, soccer, a trip to local tennis courts, basketball, gardening, painting, any activity that involves physical activity and use of motor skills. Of course, with a large group, everyone can't be outside at once. Some can be scheduled later in the morning.

10:30-12:00 — A variety of indoor activities are planned each week for the morning session. Cooking is good because lunch is being prepared and the children can be involved in a learning experience that contributes to the benefit of the group. A variety of games and arts and crafts may be provided, such as sewing and carpentry. This is a free choice period for individuals, but there may be spontaneous group activities.

12:15 — Lunch. Picnics frequently are planned for the school ground. Lunch may be carried in sacks or groups may go on nature hikes before or after lunch. With blankets, rest time can be outdoors after the picnic or hike, but children need not be required to nap.

1:00-2:30 — If at the center, this is time to lie quietly reading a book or listening to soft music. If outdoors, children may lie on a blanket, watching the clouds.

2:20-4:30 — Group activities. A group interested in wood construction might use this time to plan a project that might last a week or longer. Children interested in drama might work on a play. A group might form a band, barbershop quartet, or dance group. Another might plan a camping trip and practice skills they will need; such as fire building and recognizing edible plants. Group activities should be a part of a program for school-agers. Some morning outdoor activities may be repeated in the afternoon if it's not too hot. Field trips may be planned.

4:00 — Snacks. Serve nutritious snack in mid-afternoon. At the center, the snack may be put out so the children can help themselves without interrupting activities. If away from the center, children might take along a high energy snack.

4:30-6:00 — During this time activities are coming to a close and any planning necessary for the next day should be done. Since children are picked up at different times, this is a good time for individual activities. Each child should help clean whatever the child has been using. Some children might want to set things out for the next day's breakfast. Watch the children for signs of fatigue or boredom in order to adjust the schedule to meet their needs.

Ten-Week Summer Program

The goal of a 10-week program is the same as the goal of a longer program – to promote the healthy growth of body, intellect, and personality. The children have a wide range of choices and should help determine the program they follow. Many activities need large blocks of time and summer weather. The program includes breakfast and lunch, which the school-agers may help plan and prepare. There are daily instructions in games and activities, week-long clubs, group and individual projects, special programs, trips, and workshops.

The summer program will foster the individual's contribution to the group and appreciation of others. The school-ager will have the chance to plan and try new activities, practice leadership, and explore the environment.

The 10-week program is planned weekly so activities may reflect changing needs and interests. The standard schedule for the day is modified throughout the summer to accommodate changes in activities.

7:30-8:00	Arrival
8:00	Breakfast
8:30	Planning for the Day
9:00	Learning by Doing
10:30	Projects
12:15	Dinner
1:00	Rest
2:00	M.W.F. — Clubs; T.Th. — Individual Activities
4:00	Snacks
4:30	Wrap-up

The activities planned for each time-block are described below.

Planning

After breakfast is a good time for planning – to let everyone know what's expected of them. For example, making a tote bag is a good idea, but can only be carried out if there is material and a sewing machine, and if there is any needed help. Planning time is an opportunity to work out details of projects, share ideas, and designate individuals or small groups to carry out specific tasks.

Projects

An hour and a half each morning may be for projects. They could range from designing a storage shed to planning, planting, and caring for a garden. Some projects, such as a garden, continue throughout the summer, others for not as long (painting shelves, cleaning up a vacant lot). Some require the efforts of a large group (building a rock wall or a fence) while others need only a few people (painting the back porch floor). A project may take a week or more for completion, but some children may want to be with the project only part of the time.

Projects are chosen in a democratic way by the children and staff. However, considerable planning must be done ahead of time by the staff to guide discussions so projects will be chosen that provide physical exercise, can be planned and executed by the children, and are meaningful rather than busy work.

Learning by Doing

These sessions are offered three times a week by the staff, and sometimes by the school-agers themselves. School-agers may choose to learn modern dances, make bread, plan and execute a camping trip, make games and game strategies, cook, enact a drama, learn about science, gymnastics, nature, arts and crafts.

Individual Activities

This is a time for personal projects or small group projects, chosen by the children themselves. They might include writing an article for a newspaper, practicing a part for a play, making a candle. The school-ager should plan the activity so supplies and any needed help will be available. Younger children may need help making plans. Some children may choose free time for play with blocks, dolls, cars, etc.

Clubs

Clubs may have to do with the same activities as the "Learning by Doing" sessions, but they are scheduled for three two-hour sessions each week, so topics can be covered in detail. This is a good time for "best friends" to be together. Often, the clubs will make something to show, such as a play, an art exhibit, a gymnastics performance, or a fashion show.

Wrap-Up

This is a time when the children and staff evaluate the day's activities, present ideas, share thoughts about things which affect the whole group. On Friday the entire week's activities are reviewed.

Scheduling By Weeks

Weeks are similar in regard to scheduling, but plans will change as interests and group dynamics change. Here is how the first two weeks might go:

Week 1 — On the first morning the children arrive. Each child and parent is greeted by the teacher who has already talked with the family. Felt pens and paper are available for the children to make name tags for themselves. They might make a name tag large enough for a drawn symbol which represents something about them about which they would like to be identified. Or, the children might cut out something from a magazine to put on their name tags. Breakfast is served so that each child can eat. At planning time, the children introduce themselves and tell about the symbols on their name tags. It's especially important for staff to be enthusiastic about the upcoming summer. The first two weeks follow the basic schedule — instructions and projects in the morning, clubs and individual activities in the afternoons. To introduce the children to resources in program areas and to the variety of things that can be done, a set of instructions are offered in a single program area each morning for the first week. For example, one set might be devoted to art, having to do with drawing materials, working on space and depth in drawing, and fingerpainting. Another set of instructions could be about journalism, and discuss news, the key elements of articles (who, what, why, when, how), opinions, cartoons, human interest stories. At the wrap-up session on Friday, the children might decide to do a weekly newspaper to be sent home for parents.

Week 2 — Instruction sets for the second week might be as follows:

Monday and Tuesday:
* harmony in music
* kickball
* preserving natural materials
* using tools to make designs
* soil conditioning for gardening

Wednesday and Thursday
* barbershop quartets
* hopscotch
* outdoor cooking
* building a simple wooden object
* card games
* making hanging baskets

Friday
* charades
* sprouting seeds
* wild edibles
* baking cookies
* expressing feelings with the body

- touch art - art to be felt instead of seen

The clubs for the second week might cover a wide range of areas:

- camping - basic equipment, skills, places
- soccer - developing skills and techniques
- journalism - putting out a summer newspaper
- pencil and paper games
- choral singing
- drawing

At the end of the second week the Camping Club might display camping equipment they've learned about and a map of places that might be good for camping. The Soccer Club might play a demonstration game. The Pantomime Club or Choral Singing Club might give demonstrations. The Drawing Club might have an art showing.

Group projects during the second week might include:

- making aprons to use for art and cooking
- starting a garden
- making gameboards
- building a bike rack
- planting a shade tree
- carrying sand in wheelbarrows to the backyard.

Individual projects during the second week might include:

- learning needlepoint
- learning to observe birds
- building a "town" in the sandpile
- making a doll dress
- working with magnets
- learning to roll hair
- learning to jump rope

After the Second Week — During the rest of the summer, one week could be a trip week when groups of ten go on 3-day backpacking trips. One week might be for exploring the community, with field trips and speakers. Another week could be workshop week. Workshops in science, music and dance, drama, art, camping, and farming could meet mornings and afternoons. Other weeks follow the format of the first two weeks with activities varying according to interests and skills.

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DAY CARE for School-agers

N. Forms and Record Keeping

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Forms and Record Keeping

1. Overview

Records, forms and other materials fall roughly into two categories: 1) those relating to facility business and operation and 2) those directly pertaining to programs and the school-agers.

2. Business and Operating Records

These are required records and others important for efficient operation. Refer to the Texas Minimum Standards for more information and the *Guide For Texas Day Care* for suggested forms, outlines for information sheets, staff job descriptions, and staff evaluation forms. Also see Malcolm Host's *Administration.*

Enrollment

File the enrollment information obtained for each child prior to admission. Probably, enrollment will change during the year - families, will move, parents will make other arrangements. Enrollment information should be handy and current.

It is important to inform parents about a facility before enrollment. Prepare a description and have it typed and duplicated so a supply can be kept at the center. Outline goals and activities.

Attendance

Directors must be sure each day that all children are accounted for. Parents should contact the director when a child is to be absent.

The following format may be helpful: black

Attendance Record

Group School Age ______ Teacher ______ Dates ______

School-ager's Name	Monday	Tuesday	Wednesday	Thursday	Friday

out in advance days when a child is not expected; include other categories such as "Late Arrivals" and "Early Departures."

School-agers should have access to attendance records so they can check on a project partner, group leader, or someone else from whom they need something.

Sample Attendance Record

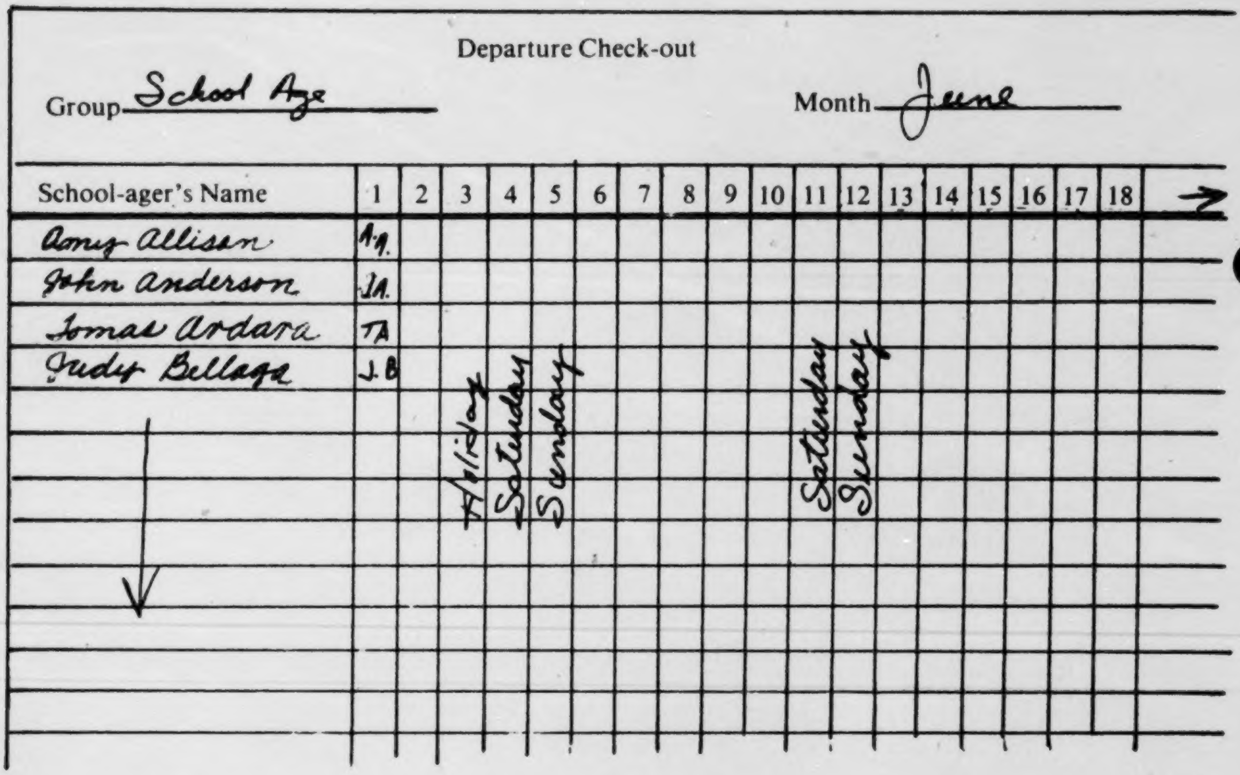
Note: Turn sheet sideways and put spaces for two weeks on each sheet.

It isn't necessary to have a roll call. School-agers can write their initials by their name when they arrive. Verify that they're present.

Sample Check-out Chart

Children may be leaving at different times, so a departure check-out list is also helpful. The person who picks up the child can initial the list when the child leaves or older school-agers can do it themselves.

Note: Turn page sideways and put spaces for each day of the month.



Departure Check-out

Group School Age

Month June

School-ager's Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	→
Amy Allison	A.A.																		
John Anderson	JA.																		
Tomas Ardara	TA																		
Judy Bellaga	J.B			Saturday	Sunday						Saturday	Sunday							
↓			Holiday																

Permission Slips From Parents

Although parents have okayed trips away from the center, they should be notified of specific plans. Parents always must know where a child is, in case of emergency. Keep a supply of information forms, and give one to parents for each trip. Permission may be needed. The following form is for information and approval.

Field Trips

Parent's Name ______________________________

Plans have been made for ______________________________ to go to ______________
(school-ager's name)
______________________________ in order to ______________________________
(destination) (purpose of field trip)
on ______________ from ______________ to ______________.
(date) (departure time) (return time)

Approved by ______________________
Parent's Signature
____
Date

This is for your information only. __________

Please sign and return. __________

Menus

Post daily menus for meals and snacks where parents and children can see them. Parents need to know what's offered so they can know what the child should eat at home and school. Children, too, should be learning about nutrition and can help plan menus.

Records of the Children's Progress

Adults working in school-age day care have the chance to see the children's progress in an environment different than the classroom. Observations about a child's development can be a valuable resource for parents and teachers. In a large group, too often individual strengths and weaknesses are overlooked. (At the end of this section, see "School Age Evaluation Summary," sample form 1.)

Records of Staff's Progress

Staff evaluation forms can help staff know their strengths and weaknesses. Forms may be reviewed and plans made for improvements. Evaluation strategies including the forms should be reviewed frequently by everyone involved.

Permanent Files

Information to keep in a permanent file includes complete enrollment information, attendance records, progress reports, and financial records. Keep menus for at least a few weeks.

3. Program Records

These are records which the children can use or at least be aware of. Some may be management tools, such as an equipment check-out list. Others may be used and taken home by the children – for instance, a two-month record of a plant's growth.

Having the children help keep records is a new concept for most children and many adults. Here are reasons the approach is valuable:

- School-agers can be very responsible if they have the opportunity;
- Visible records help furnish overviews;
- Visible records can communicate the quality of programs to parents, children, staff in other programs, and visitors.

Equipment Check-out List

Some centers use a check-out system for equipment. The child who signs for the equipment is responsible for returning it in good order to the proper place. Other centers use a check-out system only for special equipment (for example, equipment that is fragile or has many pieces).

	Equipment Check-out List			
School-ager's Name	Checked Out		Returned	
	Date	Item Name	Date	Initial

Evaluation of Activities Form

Sometimes school-agers and staff may want to evaluate activities. The "School-agers' Evaluation of Activity," sample form 2 at the end of this section, has been used successfully by children with games. It may be easily adapted for other activities.

File on Community Resources

For anyone who may be interested in the program, record names, addresses, phone numbers, and areas of expertise of community resources.

For trips, record when (day and time), where, necessary clothing, purposes, and directions for reaching destination.

Record how the children feel about the activity. Record follow-up activities.

Roster of Activities

List activities on a wall chart or in a conspicuous place. Organize by type.

List activities for which children request help. Invite children who are interested in helping others to sign up to teach certain activities.

List activities for which props are needed. List the props needed. Point out the list to visitors.

Specialized Information

Keep a record of poisonous plants and insects seen by the children. The record might include: name and common name, where found, poisonous part, symptons of poison, emergency measures to take if necessary.

Using Records and Forms

* Children and adults should agree on the purpose of each record.

* Children and adults should participate in developing the recording plan (until the school-agers can proceed independently).

* Children should have access to program records and share responsibility for them as soon and as much as possible.

* Keep records in different ways and in different places, depending on why and how they're used. Plan for speed and ease of use.

* An organized filing system simplifies record keeping and is a time-saver. An office with a desk or filing cabinet is ideal for business records. Some program records may be kept by the children; some may belong to individual children. Most program records should be accessible to the children. Some need to be filed for daily use, others need to be kept as permanent records.

* The school-agers may enjoy decorating and labeling file boxes. See the section of this guide which deals with the day-care environment for descriptions of homemade filing boxes. A makeshift filing cabinet can be made from a heavy cardboard box. Choose a size that will fit the records kept. Charts may be rolled and placed upright in the box.

Sample Forms

Sample form 1:

School Age Evaluation Summary

Name ______________ School ______________ Grade ________

Parent's name ______________ School teacher ______________

Group: ______________ Day care teacher: ______________

Evaluation dates: ______________ Evaluator, if not teacher ______________

Actions and attitudes 1-excels 2-average 3-needs to improve

	Fall	Spring	Summer
Cooperation with peers			
Cooperation with adults			
Discussion and conversation			
Self-confidence			
Participation			
Initiative			
Completion of projects			

Interests (such as games, music, reading)

Needs

What's being done to meet the needs:

Fall:

Spring:

Summer:

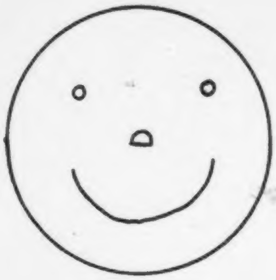
Sample form 2:

School-ager's Evaluation of Activities

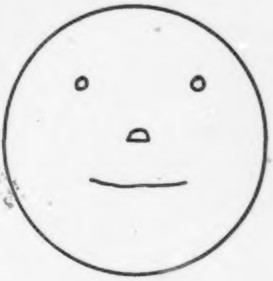
Activity ______________________________ Date ___________________________________

Name of school-ager ____

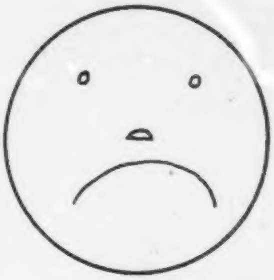
How did you feel about the new game we played today?



Great?



OK?



Terrible?

	yes	*no*
Did you learn something new?		
Would you like to do it again?		
Could you play it again at home?		
Did you understand the rules?		
Was it too hard?		
Too easy?		

Would you like to change some of the rules or do it another way? Explain.

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DAY CARE
for School-agers

Appendix: Small Equipment and Supplies

Games, Toys 2
Construction and Repair 2
Cutting, Measuring 3
Larger Equipment for Food Preparation 4
Manipulation of Materials 4
Mixing, Cooking, Transporting, Storing 5
Cleaning 6
Nature Experiences 6
Specialized Small Equipment 6
Larger Equipment 7
Basic Supplies 7
Purchase by Project 9

PS 010257

Appendix: Small Equipment and Supplies

Up to 25 children can share the equipment and supplies listed here.

The school-agers may have little experience handling tools and conserving supplies, but they can be taught by example, and benefit from planning and a few rules. Staff should insure that nothing is wasted.

Scrounged materials can be used not only for economy but for the experience of recycling and using materials creatively.

With tools, school-agers will enjoy making things important to them. And they will be working with others creatively.

Though not absolutely necessary, some inexpensive tools, such as the melon baller, are listed because they're interesting to use.

In determining quantity, the following was considered: the projected frequency of use, the number of school-agers who may be needing the tool at one time, and the durability of the tool.

In the long run, buying tools to make things is less expensive than purchasing toys, games, craft kits, and other ready-made items. More importantly, the children will develop pride in the center and its equipment.

The children will do things at home which they've learned in day care. For example, one school-ager helped younger brothers and sisters and neighborhood children make and play several games included in this guide. Such carry-over of knowledge and experience is important. School-agers will build on all day care experiences as they get older.

Instead of being a place where a school-ager has to go, day care can be a highlight of the school-ager's life.

SMALL EQUIPMENT	Quantity	Program Areas									
		Games	Toys and Props	Child's Environment	Physical Skills	Fun with Foods	Science, Nature	Arts, Crafts	Music	Communication, Dramatics	Older School-ager
Games, Toys											
— Large balls	4	✓	✓		✓				✓		
— Dice (can be made — see Games section)	4 pair	✓									
— Dolls	4	✓	✓					✓		✓	
— Jacks and balls (sets)	6	✓	✓		✓						
— Marbles	5 dozen	✓						✓			✓
— Playing cards	6 decks	✓									✓
— Ropes (for jumping and other games, 14-foot lengths)	4	✓			✓						✓
— Equipment for water activities (plastic tubular drain system, 1¼-inch pipe, floor tubes, extension tubes, 45-degree slip couplers, drain tap and drain bend)	a spare of each										
— Tires	10	✓	✓	✓	✓	✓	✓		✓	✓	✓
— Blocks	6 sets		✓	✓		✓	✓		✓	✓	
Construction and Repair											
(Refer to Arts and Crafts, Materials, Tools and Supplies for pictures.)											
— 7-ounce claw hammers	3	✓	✓	✓		✓	✓	✓	✓	✓	✓
— 6-inch pliers (slip, solid joint)	1	✓	✓	✓			✓	✓			✓
— 6-inch pliers for diagonal cutting	1	✓	✓	✓			✓	✓			✓
— 2-inch screwdrivers	2	✓	✓	✓				✓			✓
— 4-inch screwdrivers	2	✓	✓	✓				✓			✓
—Coping saws with 2 dozen blades	2	✓	✓	✓				✓		✓	✓
— 3½-inch vise which screws onto worktable	1	✓	✓	✓			✓	✓	✓	✓	✓
— 3-inch C-clamps	3	✓	✓	✓				✓			
— 10-inch hand drill with 4 sizes of drills	1	✓		✓			✓	✓	✓	✓	✓
— 25-watt soldering iron	1										
— 7-inch wood plane	1										

SMALL EQUIPMENT	Quantity	Program Areas									
		Games	Toys and Props	Child's Environment	Physical Skills	Fun with Foods	Science, Nature	Arts, Crafts	Music	Communication, Dramatics	Older School-ager
— Pencil knives with different blades	2			✓				✓			✓
— Mat knives	2			✓				✓			✓
— Awl or ice pick	1					✓		✓			✓
— Paste brushes	12							✓		✓	
— Staplers	2	✓	✓	✓		✓	✓	✓	✓	✓	✓
— Staple removers	2	✓	✓	✓		✓	✓	✓	✓	✓	✓
— Hole punch											
3 hole	1	✓	✓	✓				✓		✓	✓
1 hole	1	✓	✓	✓				✓		✓	✓
— Metal files	2		✓	✓				✓			✓
— 4½-inch blunt scissors	2					✓	✓	✓			
— 5-inch scissors for sewing, semi-pointed	2			✓				✓	✓	✓	✓
— 8-inch tin snips for heavy cutting	2	✓	✓	✓		✓	✓	✓	✓	✓	✓
— Straight pins	3 packages		✓	✓				✓	✓		
— Size-18 needles which are sharp and blunt	12 dozen	✓	✓	✓				✓		✓	✓
— Crochet hooks	6							✓			
— Artist brushes (from ¼-inch to 2-inch, mostly ½-inch and 1-inch)	10	✓	✓	✓				✓		✓	✓
Cutting, Measuring											
— Measuring spoons	2 sets			✓		✓	✓	✓			
							✓	✓			
— Deep ladles	2					✓					
— Grapefruit knifes	2					✓					
— Butcher knives	2					✓	✓	✓			
— Paring knives	4					✓	✓	✓			
— Slotted spoon	1					✓	✓	✓	✓		
— Tongs	1 pair					✓	✓	✓			
— Spatula	1					✓	✓	✓	✓		
— Wooden spoons	4					✓	✓	✓	✓		
— Rubber spatulas	2					✓		✓			
— Pancake turners	3					✓		✓			
— Apple corer	1					✓	✓	✓			
— Potato peelers	3					✓	✓	✓			
— Measuring cups (can be made - see Foods section)											
1-cup	3					✓	✓	✓			
1-pint	1					✓		✓			
— Tape measures	2	✓	✓	✓			✓	✓	✓	✓	✓
— Metric rulers	2	✓	✓	✓		✓	✓	✓	✓	✓	✓
— Compass for circles	1	✓	✓	✓					✓	✓	✓
— Yardsticks	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

SMALL EQUIPMENT	Quantity	Program Areas									
		Games	Toys and Props	Child's Environment	Physical Skills	Fun with Foods	Science, Nature	Arts, Crafts	Music	Communication, Dramatics	Older School-ager
Servings (if not available from dining area)											
— Dinner dishes, unbreakable:											
— dinner plates	30					✓					
— salad plates	30					✓					
— cereal bowls	30					✓					
— fruit bowls	30					✓					
— 8 ounch-tumblers	30					✓					
— cups and saucers	30 of each					✓ ✓					
— Silverware, stainless silver:											
— knives	30					✓					
— forks	30					✓					
— salad forks	30					✓					
— spoons	30					✓					
— teaspoons	30					✓			✓		
Larger Equipment for Food Preparation											
— Broiler oven (if there's no cooking stove)	1					✓	✓	✓			
— Popcorn popper	1					✓	✓				
— Hot plate	1					✓		✓			
— Ice cream freezer	1					✓		✓			
— Electric skillet	1					✓		✓			
— Mixer or blender	1					✓		✓			
Manipulation of Materials											
— 5-cup sifter	1					✓	✓	✓			
— 2-cup sifters	2					✓	✓	✓			
— Garlic press	1					✓					
— Juicers	3					✓	✓	✓			
— Potato masher	1	✓				✓		✓	✓	✓	
— Melon baller	1					✓		✓			
— Shredders	2					✓					
— Garnish chopper	1					✓					
— Dough blender	1					✓		✓			
— Rolling pin (can be made - see Foods section)	1					✓		✓			
— Rotary egg beater	2	✓	✓			✓		✓	✓		
— Whisk egg beater	1		✓			✓		✓	✓		
— Pastry brushes	2					✓					
— Icing bags (can be made - see Foods section)	2					✓		✓			
— Collanders	2					✓		✓			

		Program Areas									
SMALL EQUIPMENT	Quantity	Games	Toys and Props	Child's Environment	Physical Skills	Fun with Foods	Science, Nature	Arts, Crafts	Music	Communication, Dramatics	Older School-ager
— Graters	2					✓		✓			
— Biscuit cutters (can be made - see Foods section)	4					✓		✓			
— Cookie cutters (can be made - see Foods section)	6					✓		✓			
— Can opener	1					✓		✓			
— Juice can openers	2					✓		✓			
— Cutting boards (can be made)	3		✓	✓	✓	✓	✓	✓	✓	✓	
— Ice cube tray (if not in refrigerator)	1						✓				
Mixing, Cooking, Transporting, Storing											
— 1½-quart and 2½-quart mixing bowls (see Foods section)	4		✓			✓	✓	✓	✓		
— Double boiler	1					✓					
— 1½- and 2-quart pots with lids	2		✓			✓	✓	✓			
— 2-gallon pot with lid	1		✓			✓	✓	✓			
— 2-quart baking dishes	2					✓					
— 1-pint and 1½-quart casseroles	2					✓					
— Metates (mortar and pestle - used for grinding maize for tortillas or cocoa for chocolate)	3		✓			✓		✓		✓	✓
— Tortilla presses	3					✓					
— Cake pans: 8 inches by 8 inches by 2 inches	2					✓					
— Cake pan sheet: 11 inches by 7 inches by 1½ inches	1					✓		✓ ✓			
— 9-inch pie pans	4		✓	✓		✓	✓	✓	✓	✓	
— 9-inch loaf pans	2					✓					
— Muffin tins: 6 unit capacity	2					✓					
— Baking sheets: 15 inches by 10 inches (also use for serving trays)	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
— Pizza pans (also use for serving trays)	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
— Frying pans: 7 inches by 10 inches	2					✓		✓			
— Pot holders (can be made)	5					✓					
— Wire racks	2		✓	✓		✓		✓			
— 1½-quart pitchers	2					✓					
— Covered gallon pitcher	1		✓	✓	✓		✓	✓			
— Wide mouth jars with lids	4		✓	✓	✓		✓	✓			
— 1-ping and 1-quart freezer containers	6		✓		✓			✓	✓		
— Cooking spoons	3				✓		✓				
— Cooking forks	3				✓						
— Small garbage can with lid (rust-free for storing clay)	1							✓	✓		
— Stainless silver tablespoons	6				✓		✓	✓			

SMALL EQUIPMENT	Quantity	Program Areas									
		Games	Toys and Props	Child's Environment	Physical Skills	Fun with Foods	Science, Nature	Arts, Crafts	Music	Communication, Dramatics	Older School-ager
— Cart or small wheelbarrow	1						✓				✓
— Canteens (from surplus store)	2						✓				✓
— 1-quart thermos	1					✓	✓				✓
— 2-quart thermos	1					✓	✓				✓
— Ice chest (if there's no refrigerator with freezer or if needed for trips)	1					✓	✓				✓
Cleaning											
— Dish drainers	2					✓	✓	✓			
— Dust pan	1					✓	✓	✓			
— Plastic dishpans	1 per child			✓		✓	✓	✓			
— Soap dishes (can be made from plastic bottle)	3			✓		✓	✓	✓			
— Sponges (assorted sizes)	4			✓		✓	✓	✓			
— Vegetable brushes	2					✓					
Nature Experiences											
— Water hose (50 feet)	1		✓	✓	✓		✓			✓	
— Nozzle	1		✓	✓	✓		✓			✓	
— Circular sprinkler	1		✓	✓	✓		✓			✓	
— Hoes	2			✓			✓				✓
— Leaf rakes	2			✓			✓			✓	✓
— Short-handled shovels	2			✓			✓			✓	✓
— Hand trowels	2			✓		✓	✓		✓	✓	✓
— Spading forks	2					✓	✓	✓			
— Grass clippers	2			✓		✓	✓	✓			✓
— Size-1 and size-2 buckets	2	✓	✓	✓		✓	✓	✓	✓	✓	✓
— Galvanized size-2 tub	1						✓	✓			
— Funnels (can be made – see Foods section)	2				✓	✓		✓			
— Waterproof aprons	4				✓	✓	✓	✓			
— Size-1 plastic pails	2			✓	✓	✓	✓	✓			
— Washboard: small	1			✓	✓	✓	✓	✓	✓		
Specialized Small Equipment											
— Binoculars	1						✓				✓
— Butterfly net (can be made)	1						✓				
— Directional compass	1						✓				
— Flashlight	1						✓				
— Magnifying glasses: in stand	1		✓				✓				
not in stand	2						✓				

SMALL EQUIPMENT	Quantity	Program Areas									
		Games	Toys and Props	Child's Environment	Physical Skills	Fun with Foods	Science, Nature	Arts, Crafts	Music	Communication, Dramatics	Older School-ager
— Scales	1			✓		✓	✓	✓			
-- Stethoscope	1			✓							
-- Thermometers: weather	1										
candy	1					✓	✓				
— Full length mirror	1			✓							✓
— Timer	1					✓	✓	✓			
— Mats for rest (sheet-foam from army/navy surplus to make mats)	1 per child				✓						
Larger Equipment											
— Work bench (or other sturdy item for woodwork)	1	✓	✓	✓	✓				✓	✓	✓
— Portable sewing machine	1	✓	✓	✓				✓	✓		✓
— Paper cutter	1	✓	✓						✓		
— Adjustable double-easel	1								✓		
— Record player	1									✓	
— Phonographs records (folk music, dance, stories, popular songs)	10									✓	✓
— Tape recorder	1									✓	✓
— Tapes for recording (60-minutes)	2									✓	✓
— Exercise mats	2				✓						
Basic Supplies											
— White glue	8 squeeze bottles and 2 gallons	✓	✓	✓		✓	✓	✓	✓	✓	✓
— Masking tape: 4 rolls — 2 inch by 60 yards 4 rolls — ¾ inch by 60 yards	8 rolls	✓	✓	✓		✓	✓	✓	✓	✓	✓
— Newsprint (18 inches by 24 inches)	4 reams	✓	✓	✓		✓	✓	✓	✓	✓	✓
— Butcher paper (24 inches by 1,000 feet)	2 rolls	✓	✓	✓		✓	✓	✓	✓	✓	✓
— Foil (37.5 square feet per roll)	6 rolls					✓		✓		✓	
Wax paper (100 square feet per roll)	6 rolls					✓	✓	✓			
— Nails (8d common nail, 8d finish nail, 4d nail, 1 inch brad)	5 pounds	✓	✓	✓			✓	✓	✓	✓	✓
— Screws (1½-inch and 2-inch, standard head-wood screws)	100	✓	✓	✓			✓	✓	✓	✓	
— Sandpaper (multi-graded assortment, 9 inches by 10 inches)	3 packages			✓				✓	✓		
— Enamel paint (multi-colored, 1 pint)	12 cans	✓	✓	✓				✓		✓	✓
— Acrylic paint (multi-colored)	12 tubes	✓	✓	✓				✓	✓	✓	✓

SMALL EQUIPMENT	Quantity	Program Areas									
		Games	Toys and Props	Child's Environment	Physical Skills	Fun with Foods	Science, Nature	Arts, Crafts	Music	Communication, Dramatics	Older School-ager
— Pencils, sizes 2, 3	3 dozen	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
— Plastic wood	2 tubes	✓	✓	✓				✓		✓	
— Crayons (packages of 64 colors)	6 sets							✓			
— Colored chalk	3 sets							✓			
— Colored map pencils (set of 12)	6 sets			✓			✓	✓		✓	✓
— Powdered tempera: (2-quart cans) 2 black 4 white 3 primary colors 3 secondary colors	12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
— Felt tip markers (assorted colors)	3 sets	✓	✓	✓		✓	✓	✓	✓	✓	✓
— Construction paper (assortment packages, 18 inches by 24 inches)	4 packages		✓					✓		✓	
— Craft paper (36 inches by 1,100 feet) yellow (1) light blue (1)	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
— Yarn (medium weight, color fast) 4-ply, 80-yard skeins	12 skeins							✓			
— Embroidery thread (assorted colors, 9 yards per skein)	15 skeins							✓			
— Sewing thread (black, white, assorted colors)	8 large spools		✓					✓		✓	
— Elastic:											
½-inch	6 yards									✓	
1-inch	4 yards							✓	✓		
— Nylon net, fine weave, any color	5 yards					✓	✓		✓		✓
— Ball of twine	200 yards	✓	✓	✓			✓	✓	✓	✓	✓
— Pottery clay	10 pounds						✓	✓			
— Liquid starch	1 gallon						✓	✓			
— Soap flakes	1 giant size						✓	✓			
— Clothespins	4 dozen	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
— Toothpicks	3 packages					✓		✓			
— Flour	10 pounds					✓		✓		✓	✓
— Salt	5 pounds					✓		✓			
— Soda	21.6-ounce package					✓		✓			✓
— Cornstarch	16-ounce package					✓		✓			✓
— Oil	½ gallon					✓		✓			✓
— Cleansing powder	10-pound box	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
— Paste furniture wax	1-pound can		✓	✓				✓		✓	✓

SMALL EQUIPMENT	Quantity	Program Areas									
		Games	Toys and Props	Child's Environment	Physical Skills	Fun with Foods	Science, Nature	Arts, Crafts	Music	Communication, Dramatics	Older School-ager
— Clear plastic acrylic, (15-ounce spray can, adult use only)	3	✓	✓	✓			✓	✓	✓	✓	✓
— Plastic bags (for storage)	2 packages					✓	✓	✓			
— Paper sacks, 100 per package	2 packages							✓		✓	
— Cotton balls	giant-size bag									✓	
Purchase by Project											
— Doweling (assorted sizes)											
— Wooden and plastic beads for macrame											
— Metal rings											
— Soft wire (plastic covered wire, assorted colors)											
— Pipe cleaners											
— Popsicle sticks											
— Potting soil (for bad soil)											
— Flower and vegetable seeds in packets											
— Manila paper (18 inches by 24 inches)											
— Tissue paper (assorted colors, 20-inch by 30-inch sheets)											
— Crepe paper (20 inches by 7½ inches)											
— Poster board (multi-colored)											
— Notebook filler											
— Pine wood											
— Balsa wood											
— Food coloring (4 color set)											
— Cloth dye											
— Rope (sized for project)											
— Fabric (type needed for project)											
— Burlap (multi-colors)											
— Felt											